

**United States Court of Appeals
for the Federal Circuit**

ROKU, INC.,
Appellant

v.

INTERNATIONAL TRADE COMMISSION,
Appellee

UNIVERSAL ELECTRONICS, INC., GEMSTAR TECHNOLOGY(QINZHOU) CO. LTD.,
GEMSTAR TECHNOLOGY (YANGZHOU) CO. LTD., C.G. DEVELOPMENT LTD.,
UNIVERSAL ELECTRONICS BV, CG MEXICO REMOTE CONTROLS, S. de R.L. de C.V.,
CHARTER COMMUNICATIONS, INC., CHARTER COMMUNICATIONS OPERATING LLC,
SPECTRUM MANAGEMENT HOLDING COMPANY, LLC, ALTICE USA, INC.,
CABLEVISION SYSTEMS CORPORATION, CEQUEL COMMUNICATIONS, LLC
d/b/a SUDDENLINK COMMUNICATIONS, WIDEOPENWEST, INC.,
SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS INC., LG ELECTRONICS USA, INC.,
Intervenors

Appeal from the United States International Trade Commission in Investigation No. 337-TA-1263

APPELLANT'S OPENING BRIEF (NON-CONFIDENTIAL)

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PATENT CLAIMS*

U.S. Patent No. 8,378,875, Claims 1 and 10

1. **[pre]** A method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter, the method comprising the steps of:

[a] entering, via the keyboard and processor, a configuration mode;

[b] accepting, via the keyboard and processor, an identifier entry;
and

[c] scanning, via the processor and memory, though remote control code-sets in a database stored in the memory of the Remote Control, wherein the step of scanning comprises:

[c(1)] in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating, via the processor and memory, through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or more specific control code functions of a corresponding remote control code-set, and

[c(2)] in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set.

10. A non-transitory computer-readable medium embodied with a computer program that comprises computer program code executable by a processor to perform the steps of setting up a Remote Control of claim 1.

* Appellant has added annotations to each limitation of claim 1 that align with those used by the parties and the Commission below.

U.S. Patent No. 7,388,511, Claim 5

5. A method for remote control of at least two like controllable devices, the method comprising:

- a) with a remote control device,
 - inputting a user-specified command for controlling the controllable devices; and
 - transmitting the user-command;
 - b) with a coding device,
 - receiving the user-specified command from the remote control device;
 - adding to the user-specified command a device identifier for identification of at least one of the controllable devices;
 - transmitting the device identifier and the user-specified command in combination;
 - c) with one of the like controllable devices,
 - receiving the device identifier and the user-specified command in combination;
 - extracting the device identifier;
 - comparing said extracted device identifier with a further device identifier for identification of the controllable device;
 - refraining from further operation with the received user-specified command if said identifiers do not match; and
 - supplying the user-specified command if said identifiers do match;
- wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, and wherein the step of transmitting the user specified command further includes:

transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected.

CERTIFICATE OF INTEREST

Counsel for the Appellant Roku, Inc. certifies the following:

1. Full name of every party represented by me:

Roku, Inc.

2. The real name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

None.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party represented by me are:

None.

4. The names of all law firms and the partners or associates that (a) appeared for the party or amicus now represented by me in the originating court or agency or (b) are expected to appear in this court (and who have not already entered an appearance in this case) are:

**Kenneth Dyer (formerly of) Dickinson Wright RLLP
Evi Li (formerly of) Dickinson Wright PLLC**

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeals:

Roku, Inc. v. Universal Electronics, Inc., et al., Case No. 8:21-cv-00658 (C.D. Cal.)

Universal Electronics, Inc. v. Roku, Inc., IPR2022-00818 (PTAB)

6. Any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees) is as follows:

Not applicable.

Dated: October 11, 2023

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CONFIDENTIAL MATERIAL OMITTED

No material has been omitted from the public version of the brief. The material omitted from the public version of the Addendum on pages Appx22, Appx24-25, Appx46, Appx69-70, Appx135-141, Appx146-148, Appx154, Appx167, Appx173-174, Appx180-182, Appx188, Appx196-209, Appx212-213, Appx227, Appx230 are confidential portions of Commission and ALJ orders that contain: confidential information concerning Roku’s products and proprietary technology and development process; confidential information concerning Roku’s investments in its products, sales information, and agreements; confidential information concerning third-party agreements, sales information, and proprietary technology; and confidential information concerning Respondents’ inventory and sales information.

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TABLE OF ABBREVIATIONS

Abbreviation	Meaning
'875 patent	U.S. Patent No. 8,378,875 [Appx272-283]
'511 patent	U.S. Patent No. 7,388,511 [Appx284-292]
Roku	Roku, Inc.
UEI	Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co., Ltd., C.G. Development Ltd., Universal Electronics BV, CG Mexico Remote Controls, S. De R.L. De C.V.
Charter	Charter Communications, Inc., Charter Communications Operating, LLC, Spectrum Management Holding Company, LLC
Altice	Altice USA, Inc., Cablevision Systems Corporation, and Cequel Communications, LLC
WOW	WideOpenWest, Inc.
LG	LG Electronics and LG Electronics USA, Inc.
Samsung	Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.
Respondents	UEI, Charter, Altice, WOW, LG, and Samsung
ITC, or the Commission	U.S. International Trade Commission
ALJ	Administrative Law Judge
The ITC Investigation	<i>In re Certain Televisions, Remote Controls, and Components Thereof</i> , Inv. No. 337-TA-1263 (International Trade Commission)
ID	Initial Determination of the ALJ, ITC Inv. No. 337-TA-1263 (June 28, 2022) [Appx38-220]
Opinion	Commission Opinion, ITC Inv. No. 337-TA-1263 (Oct. 28, 2022) [Appx1-29]
Order 30	ALJ's Order No. 30: Construing Certain Terms of U.S. Patent No. 7,388,511 (<i>Markman</i> Claim Construction), ITC Inv. No. 337-TA-1263 (Jan. 14, 2022) [Appx236-258]
Order 37	ALJ's Order No. 37: Initial Determination Granting Summary Determination In-Part on the Invalidity of U.S. Patent No. 7,388,511, ITC Inv. No. 337-TA-1263 (June 24, 2022) [Appx30-37]
POSA	Person of Ordinary Skill in the Art

STATEMENT WITH RESPECT TO ORAL ARGUMENT

Pursuant to Federal Rule of Appellate Procedure 34(a), Appellant Roku, Inc. (“Roku”) respectfully requests oral argument in this matter. This matter meets the standards of Rule 34(a)(2) for oral argument, and Roku believes that oral argument would significantly aid the Court’s decisional process.

STATEMENT OF RELATED CASES

Roku is unaware of any other previous or pending appeal in or from the same agency proceeding, ITC Inv. No. 337-TA-1263, in this Court or in any other appellate court.

The following cases are pending and may directly affect or be directly affected by the Court's decision in the pending appeal:

Roku, Inc. v. Universal Electronics, Inc., et al., Case No. 8:21-cv-00658 (C.D. Cal.) (stayed pending completion of ITC Investigation No. 337-TA-1263 and appeals thereof)

Universal Electronics, Inc. v. Roku, Inc., IPR2022-00818 (PTAB) (U.S. Patent No. 8,378,875)

STATEMENT OF JURISDICTION

This Court has jurisdiction under 19 U.S.C. § 1337(c) and 28 U.S.C. § 1295(a)(6) of this appeal from a final determination of the U.S. International Trade Commission. The Commission issued its final determination on October 28, 2022. Appx1-29. Roku, Inc. timely filed this appeal on December 20, 2022. Dkt. No. 1.

STATEMENT OF THE ISSUES

1. The Commission found that claim 10 of the '875 patent is anticipated and/or would have been obvious in light of the prior art. That finding was based on an erroneous claim construction, conclusory testimony, and a failure to make the required finding regarding a reasonable expectation of success. Did the Commission err?

2. The Commission found that that Roku did not satisfy the technical prong of the domestic industry requirement for an industry in the process of being established. It did so by disregarding all evidence of Roku's development activities after the filing of the Complaint. Did the Commission mistakenly interpret 19 U.S.C. § 1337 regarding the relevant determination date?

3. The '511 patent expired while this appeal was pending, rendering that portion of the appeal moot. Should the Court vacate the Commission's finding that claim 5 of that patent is invalid as indefinite?

STATEMENT OF THE CASE

A. Introduction

Roku pioneered streaming to the TV, and, by hours streamed, is the leading TV streaming platform in the United States. Roku streaming players and TVs enable consumers to access a wide selection of content by connecting their Roku device to Roku's streaming platform using a home broadband network. Intervenor Universal

Electronics, Inc. (“UEI”) developed and sells remote controls to cable companies and consumers.

This appeal arises from a section 337 investigation that Roku requested on April 8, 2021. Pertinent to this appeal, Roku’s complaint alleged that Respondents—UEI and certain cable companies and TV manufacturers who are UEI customers—violated section 337 by importing certain remote controls and TVs that infringe Roku’s U.S. Patent Nos. 8,378,875 (“the ’875 patent”) and 7,388,511 (“the ’511 patent”).

The ’875 patent relates to programming a universal remote control (“URC”). The patent solved several long-standing problems of such remotes, including the difficulty in setting them up to control a TV or other consumer electronic device and the amount of memory they required. The ’875 patent discloses and claims two alternative set-up procedures—“brand-search” and “manual code-set-id selection”—within a single configuration mode. The only claim of the ’875 patent at issue in this appeal is claim 10.

The Commission made two errors regarding the ’875 patent. First, while it correctly found that certain remotes imported by Respondents infringed claim 10, it erroneously found this claim invalid in light of the prior art. Respondents’ prior art discloses a very different set-up procedure: unlike the claimed brand-search method where the remote iterates through testing potential codes without requiring user

intervention, the prior art requires the user to repeatedly press a button on the remote to send each test code.

Second, the Commission incorrectly found that Roku had not shown that its “Gazelle” remote satisfied the technical prong of the domestic industry requirement. The Gazelle was under development at the time of the ITC Investigation, but the Commission ruled that Roku was ostensibly not “in the process of establishing a domestic industry” because the Commission used the wrong temporal standard—the date of the complaint rather than the close of the evidentiary record—in making this determination.

As for the ’511 patent, the Commission erroneously determined that claim 5 was invalid as indefinite. But since the patent expired while this appeal was pending thereby mooting an appeal on the merits, Roku does not challenge the Commission’s indefiniteness finding. Rather, in line with well-established law, the Court should vacate the Commission’s invalidity determination.

B. U.S. Patent No. 8,378,875

1. Overview of the ’875 patent

The ’875 patent generally relates to programming a URC. Appx278 (1:7-8). The ’875 patent solved several long-standing problems of URCs, including the difficulty in setting them up to control a device and the amount of memory they

required. Appx278 (1:7-2:45) (“It is an object of the invention to provide a URC with an easy setup while requiring limited memory resources”).

One prior-art method for setting up a URC called “manual code-set-id selection” involved the user entering into the remote a 3-to-5-digit code-set identifier from a user manual. Appx278 (1:24-39); Appx279 (3:1). “The main drawback of this scenario is that it’s tedious for a user to enter the code-set-id digits and try to find a code-set that works. Many will not have any effect on the equipment at all. Also this requires a pretty extensive list that contains all combinations of Brand/Device-types and their list of code set-ids to be tried.” Appx278 (1:40-45).

Another prior-art method called “brand-search” required the user “to enter a brand-id (instead of a code-set-id) and choose the device-type he wants to find IR-codes for.” Appx278 (2:6-9). After pressing certain buttons to start the procedure, the user enters the ID corresponding to the device’s brand, *id.* (2:9-11), and an auto-scan starts for the code-sets for that brand, *id.* (2:12-13). This method makes it simpler for a user to find a code-set that works, *id.* (1:52-53, 2:12-15), but it “consumes a lot of storage space” on the remote because “for all brands the [remote] needs to keep a reference to all the code-sets for a certain brand/device-type combination,” *id.* (2:17-20).

The ’875 patent explains that its “main improvement is to combine the ‘Brand-id’ (as used in the Brand-search method) with the ‘Code-set-id’ (as used in the

‘manual code-set-id selection’ method)” within a single configuration mode. Appx278-279 (2:65-3:1). “This allows making the configuration of a URC simpler for a user. At the same time it makes producing the so created simpler URC cheaper for the manufacturer because there is no additional need for electronic storage and the instructions for use (e.g. manual) can be kept a lot smaller.” Appx278 (2:60-65).

2. Claim 10 of the ’875 patent

The Commission found that Respondents infringed claim 10, which is the only claim at issue in this appeal. Claim 10 depends from method claim 1 and recites a “non-transitory computer-readable medium” storing “program code executable ... to perform the steps of setting up a Remote Control of claim 1.” Appx282 (cl.10).

Base claim 1 recites “[a] method for setting up a Remote Control.” *Id.* (cl. 1). Claim 1 recites both the brand-search and the manual code-set-id selection methods discussed in the specification:

1[pre] A method for setting up a Remote Control ..., the method comprising the steps of:

...

1[b] accepting ... an identifier entry; and

...

1[c(1)] [brand search] in case that the identifier-entry is a brand-identifier that identifies a brand, (i) *iterating, via the processor and memory, through the remote control code-sets corresponding to the brand* and (ii) testing said remote control code-sets by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or

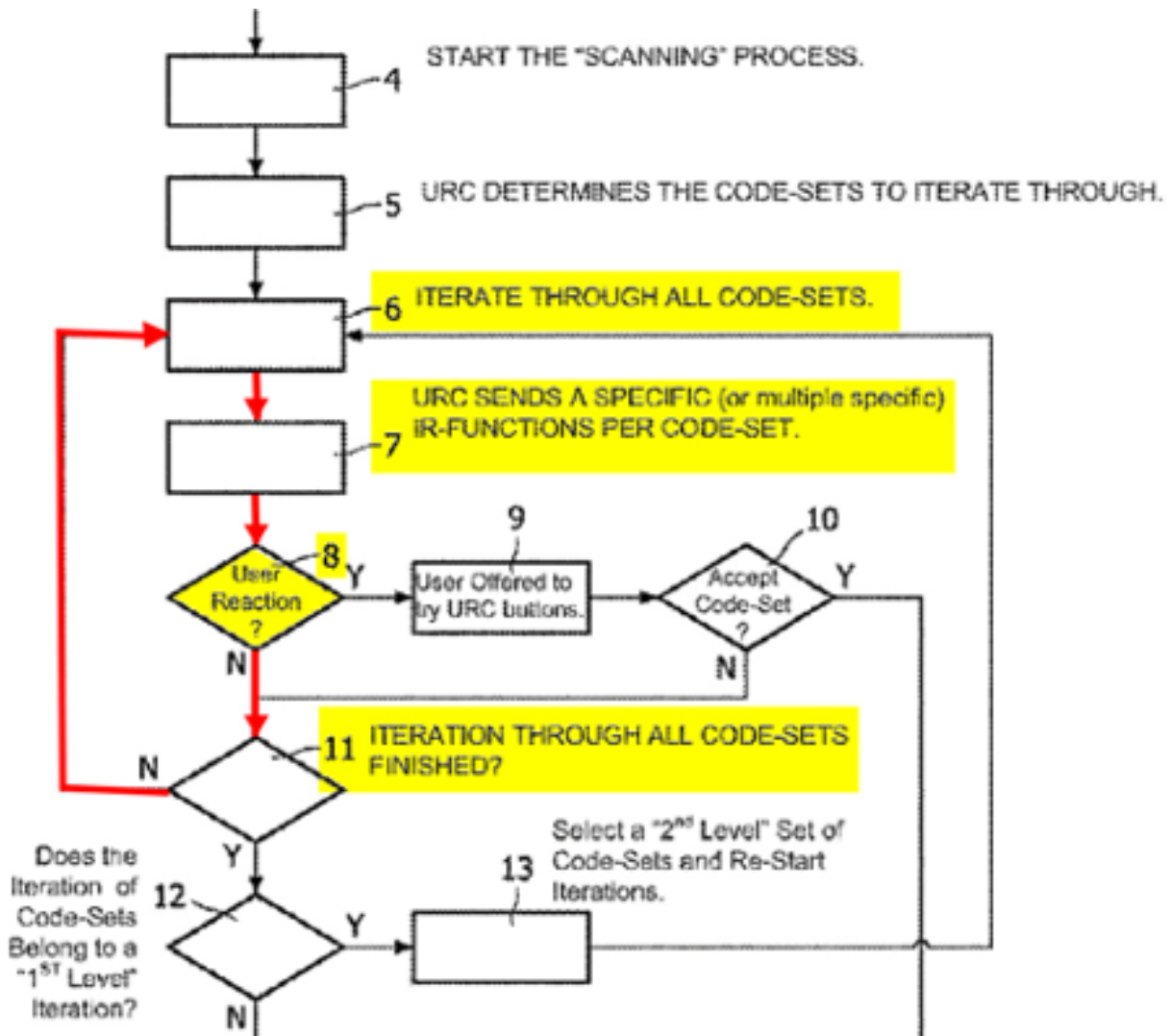
more specific control code functions of a corresponding remote control code-set, and

1[c(2)] [manual code-set-id selection] in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set.

*Id.*¹

A key dispute regarding validity involves the proper interpretation of the “iterating” limitation in the brand-search procedure of limitation 1[c(1)]. Brand-search is illustrated in the following flowchart from Figure 5:

¹ All emphasis and annotations added unless otherwise noted.



Appx275 (annotated)

The loop between steps 6 and 11 illustrates the testing of codes using the brand-search method. The loop continues without user intervention until the user reacts in step 8 when the tested code works, for example, by turning off the device. The specification explains that “the software iterates through all these codesets” for a brand. Appx280 (6:32-33). The specification discloses two ways to perform this iteration. In the first way, the user presses a button to start the iteration, which then

continues until the user presses a button to stop. In the second way, the user presses and holds a button, and the iteration continues until the user releases the button. *Id.* (6:27-45). In both approaches, the remote progresses through the code-sets to be tested without user intervention. The specification does *not* disclose any embodiment where a user presses a button to send each test code.

3. Respondents' Prior Art

Respondents asserted three groups of prior art against the '875 patent: (1) four Philips remote controls; (2) an RCA remote control; and (3) a LeapFrog remote control. But, as explained below, only the Philips prior art is relevant to this appeal.

(a) The Philips prior art

The parties agreed that the four Philips remotes (the PMDVD6, PM725S, 435S, and the Zenith-branded ZN501S) were substantially similar to each other, and any differences were irrelevant to Respondents' invalidity allegations.² Appx165-166. The discussion below focuses on the PMDVD6 remote because it was the primary remote discussed at the evidentiary hearing, but the same arguments apply equally to the others.

² The differences concern whether their code-set identifiers have 3 or 4 digits and whether the remotes have an additional "learning mode." Appx10154-10155.

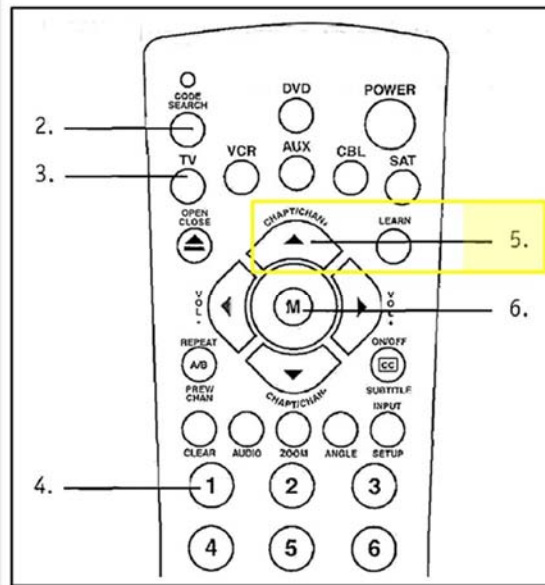
The PMDVD6 is a URC for controlling devices like TVs and VCRs. Appx17127. The remote has various set-up procedures to enable the user to select the right code for controlling a device. *Id.*

One of the disclosed set-up procedures is “Code Search by Brand.” Appx17132; Appx10925; Appx10733 (838:1-23). As described in the user manual and shown below, the user presses and holds the Code Search button until an indicator light stays on. Appx17132. The user then presses a mode button for the device type to be controlled (e.g., a TV or VCR). *Id.* The user then presses and releases the numeric button (0-9) associated with the device’s brand, and then presses the CHANNEL UP button repeatedly until the device changes the channel. *Id.* This contrasts with the ’875 patent’s disclosed procedure in which the remote sends out a series of test codes without user intervention. Appx280 (6:28-30). When the PMDVD6 successfully changes the channel, the user presses the MUTE button to install the code. Appx17132.

Code Search by Brand

Lets you search for a code for a specific Brand within the Code Library for a particular manufacturer.

1. Turn on the device (TV, VCR, etc.) to be controlled.
2. Press and hold the **CODE SEARCH** button until the red indicator remains on, then release **CODE SEARCH** button.
3. Press and quickly release the desired mode button (**TV**, **VCR**, etc.). The red indicator blinks off once.
4. Press and release the numeric button (**0-9**) corresponding to desired Manufacturer (see table on next page). The red indicator blinks off once. Note, pressing "0" performs a full library search same as normal Code Search Method on previous page.
5. Press the **CHANNEL UP** button (or **POWER** or **PLAY** (VCR only)) repeatedly until the device to be controlled changes channel. The red indicator blinks off with each button press. If you accidentally overshoot the code required, press the **CHANNEL DOWN** button to backtrack through the library until the device changes channel. Pressing **CHANNEL UP** changes direction to forward again.
6. Press and release **MUTE** to install the code.



Appx17132 (annotated)

(b) The RCA prior art

Respondents have waived any argument that claim 10 is anticipated or rendered obvious by the RCA RCR815 remote. Appx3761 (§ 10.1). They asserted the RCR815 as prior art only against claim 1 (Appx167), and they presented no evidence at the hearing that the RCR815 anticipated or rendered obvious any other claims, including claim 10. Consequently, the Commission made no finding that the RCR815 anticipated or rendered obvious claim 10.

(c) The LeapFrog prior art

Respondents have abandoned the LeapFrog remote as prior art. The ALJ found that Respondents failed to prove that LeapFrog qualified as prior art. Appx175-176. They did not seek Commission review of this finding (Appx10288), thereby rendering the ALJ's finding final and non-appealable. 19 C.F.R. § 210.43(b)(3)-(4).

C. U.S. Patent No. 7,388,511

The '511 patent generally relates to systems and methods of controlling multiple like-controllable devices in a home entertainment system. The patent issued on a PCT application with an October 31, 2002 filing date. Appx284. The patent received a 233-day patent term extension, and thus expired on June 21, 2023. 35 U.S.C. § 154.

D. Roku's Domestic Industry in the Process of Being Established

During the ITC proceeding, Roku's domestic industry for the '875 patent was in the process of being established through the development of its next-generation remote control, codenamed "Gazelle." The Gazelle remote was designed to implement the functionality described in the Feature Guide: Unified TV IR Code Configuration (Appx15295-15296), and thus practice claims 1-4, 8, 10, and 14 of the '875 patent. Appx10529 (260:17-20).

Gazelle was a cost-reduced version of its predecessor “Falcon” remote, which in turn was a cost-reduced version of its predecessor “Elk” remote. Appx10482 (70:12-14; 71:2-9). Gazelle’s software and hardware are extremely similar to that of Falcon and Elk. About 99% of Falcon’s software was used on Elk, and that same 99% will be used on Gazelle. *Id.* (71:10-14). Other than the specific microprocessor, the remaining hardware is virtually the same across Elk, Falcon, and Gazelle. *Id.* (71:20-72:9). Accordingly, all of Roku’s steps developing Elk and Falcon were necessary tangible steps in developing Gazelle. *Id.* (70:23-72:9). Roku spent tens of thousands of engineering hours since 2018 developing Elk, Falcon, and Gazelle. *Id.* (72:21-24).

In addition to the foundational work in developing those predecessors, Roku took significant tangible steps specific to Gazelle before filing the Complaint and through the end of fact discovery and beyond. For example, specific work on Gazelle began in late 2020 with discussions among Roku’s remote-control team about enabling the power, volume, and mute buttons of a Roku infrared remote to control a television. Appx10483 (76:1-20). In January 2021, Roku completed exploratory research regarding potential uses of Gazelle. Appx10483-10484 (76:21-77:12); Appx17535. In March 2021, Roku formally kicked off the Gazelle project and began holding weekly meetings regarding design, development, and testing. Appx10486-10487 (88:17-24, 91:12-92:13); Appx18751-18760; Appx18218-18223; Appx18225-18233.

In late March and early April 2021, before the Complaint was filed, Roku drafted the Feature Guide describing the Unified TV configuration functionality that implements the '875 patent. Appx10484 (77:19-78:16); Appx18701-18707. In preparing the Feature Guide, Roku also scoped and committed to a significant number of engineering hours for developing and testing this functionality. Appx10485 (84:14-85:19); Appx18705-18706.

During the ITC proceeding and before the close of fact discovery, Roku took additional steps in developing Gazelle consistent with its planned October 2022 release date. For example, Roku

- held weekly team meetings regarding all of Gazelle's technical aspects (Appx18225-Appx18233);
- conducted detailed work regarding Gazelle's microprocessor (Appx10487-10488 (92:14-93:12); Appx18229);
- conducted user research regarding interaction with Gazelle's features (Appx10488; Appx18706);
- created and evaluated numerous iterations of Gazelle's industrial design (Appx10488 (93:22-94:9, 94:10-95:7, 95:24-96:5); Appx18706; Appx17171; Appx12147);

- worked on developing source code necessary for implementing the Feature Guide (Appx10488 (96:9-25); Appx18226; Appx24064-24065); and
- prepared mappings of Gazelle button sequences to codeset-ids for implementing the Feature Guide (Appx10489 (98:23-99:12)).

Before the close of fact discovery, Roku also approved formal milestones for all of Gazelle’s technical features through the scheduled release date. Appx10486-10487 (87:25-91:4); Appx18750-18751; Appx18710. As of the close of fact discovery, all of these milestones were on track and expected to be completed by the scheduled dates. Appx10487 (91:1-11); Appx18750-18751; Appx10489 (99:13-24); Appx10956.

After the close of fact discovery, Roku continued its normal development process.³ For example, Roku

- created Gazelle schematics and released them to the factory (Appx9674 (¶5)); and
- completed the source code to implement the Feature Guide and uploaded that code to a remote for testing (Appx9675 (¶8)).

³ As explained below, the ALJ erroneously precluded Roku “from introducing any testimony regarding alleged developments of the Gazelle after the close of fact discovery.” Appx230-231.

In summary, as of the close of fact discovery, Roku was taking the necessary tangible steps to release Gazelle, and the post-discovery evidence further confirmed that the planned release was on track.

E. Proceedings Below

Roku's ITC complaint alleged that UEI, Charter, Altice, WOW, LG, and Samsung collectively violated section 337 through their importation of products that infringed the '875 and '511 patents. The ALJ held two days of Markman hearings and issued two claim construction orders. Appx236-258; Appx259-271.

With respect to the '511 patent, the ALJ found that claim 5, the only asserted claim, was indefinite, and subsequently granted summary determination of invalidity for indefiniteness. Appx246-250; Appx30-37.

Following an evidentiary hearing, the ALJ issued an initial determination ("ID") as to the '875 patent that found that (1) four representative UEI remote controls infringe apparatus claim 10 (Appx53); and (2) Respondents imported each of those infringing products (Appx68); but (3) claim 10 was anticipated or obvious (Appx153); and (4) Roku had not satisfied the economic or technical prongs of the domestic industry requirement (Appx145-148). Accordingly, the ID found no violation of section 337.

Both Roku and Respondents petitioned for review, and the Commission granted review on certain issues. Appx10459-10463. In its Final Determination, the

Commission took “no position” on the economic prong of domestic industry (Appx25-26), thus effectively vacating the ID’s finding and making it unreviewable. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1422-23 (Fed. Cir. 1984). The Commission also adopted the ID’s finding regarding the technical prong of domestic industry, albeit under a modified analysis that domestic industry must be assessed as of the date of the complaint. Appx21-25. Except for certain modifications to the ID’s wording, the Commission adopted the remainder of the ALJ’s findings as to the ’875 and ’511 patents. Appx2; Appx10-17; Appx25-26. Roku timely appealed.

SUMMARY OF THE ARGUMENT

The Commission correctly determined that the four representative products infringe claim 10 of the ’875 patent, and that Respondents imported these products into the United States. But the Commission erroneously found no violation of section 337 based on its erroneous findings of (1) the patent’s invalidity and (2) lack of the technical prong of domestic industry.

First, the Commission’s erroneous finding of anticipation was based on its reversible error in construing the term “iterating, via the processor and memory, through the remote control code-sets,” in base claim 1. The intrinsic record shows that “iterating” refers to a process performed by the remote, without user intervention, *not* by the user’s repeatedly pressing a key to manually step through the code-sets. Because the term is used in this manner throughout the specification,

the patentee has defined this term by implication. This interpretation is further supported by extrinsic evidence, including technical dictionary definitions—unrebutted by Respondents—which shows this is the term’s ordinary meaning to a person of ordinary skill in the art (“POSA”). Under Roku’s construction, Respondents do not dispute that the prior art fails to disclose this limitation, and that claim 10 is not anticipated.

Second, the Commission committed reversible error by finding that, under Roku’s construction of “iterating,” the claim would have been obvious. The Commission’s finding was based on conclusory and unsupported testimony by Respondents’ expert regarding a motivation to modify the prior art. Additionally, Respondents provided no evidence, and the Commission made no finding, that a skilled artisan would have had “a reasonable expectation of success” of achieving the claimed invention.

Third, the Commission committed reversible error by determining that Roku did not satisfy the technical prong of the domestic industry requirement. The Commission erroneously held that the determination of whether a domestic industry is in the process of being established must be determined as of the date of the complaint, unless there are significant and unusual developments. In fact, the proper temporal standard is the close of the evidentiary record. The Commission therefore

improperly disregarded all of Roku's development activities after the date of the complaint.

With respect to the '511 patent, the Commission's finding that claim 5 is indefinite should be vacated because this patent expired during the pendency of this appeal, thereby mooting the appeal and precluding a substantive review of the Commission's finding.

STANDARD OF REVIEW

This Court reviews a final determination of the Commission in accordance with Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706. *See* 19 U.S.C. § 1337(c). Accordingly, this Court reviews "questions of law, as interpreted and applied by the ITC, *de novo*." *Lelo v. ITC*, 786 F.3d 879, 883 (Fed. Cir. 2015). This Court reviews the Commission's factual findings under the "substantial evidence" standard. *Enercon GmbH v. ITC*, 151 F.3d 1376, 1381 (Fed. Cir. 1998).

Obviousness is a legal question based on underlying fact findings. *Purdue Pharma L.P. v. Epic Pharma, LLC*, 811 F.3d 1345, 1351 (Fed. Cir. 2016). Claim construction is a question of law that may involve subsidiary questions of fact. *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 751 (Fed. Cir. 2016). Where claim construction relies solely on intrinsic evidence, the construction is purely legal and reviewed *de novo*. *AstraZeneca AB v. Mylan Pharms. Inc.*, 19 F.4th 1325, 1329 (Fed. Cir. 2021).

ARGUMENT

I. THE COMMISSION ERRED IN DETERMINING THAT CLAIM 10 OF THE '875 PATENT IS INVALID.

A. The Commission Erred in Finding that Claim 10 Is Anticipated.

The Commission's finding of anticipation of dependent claim 10 is based on a legally erroneous interpretation of limitation [c(1)] of base claim 1: "(i) iterating, via the processor and memory, through remote control code-sets corresponding to the brand." Correctly construed, the prior art does not anticipate claim 1, and therefore does not anticipate dependent claim 10. *See W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555 (Fed. Cir. 1983) ("Because we conclude that the independent claims of the '390 patent are patentable over the art of record, we need not discuss the dependent claims.").

1. The Commission erred in its construction of claim limitation 1[c(1)].

Claim 1 recites a "method for setting up a Remote Control." Figure 5 of the patent shows an embodiment of claim 1:

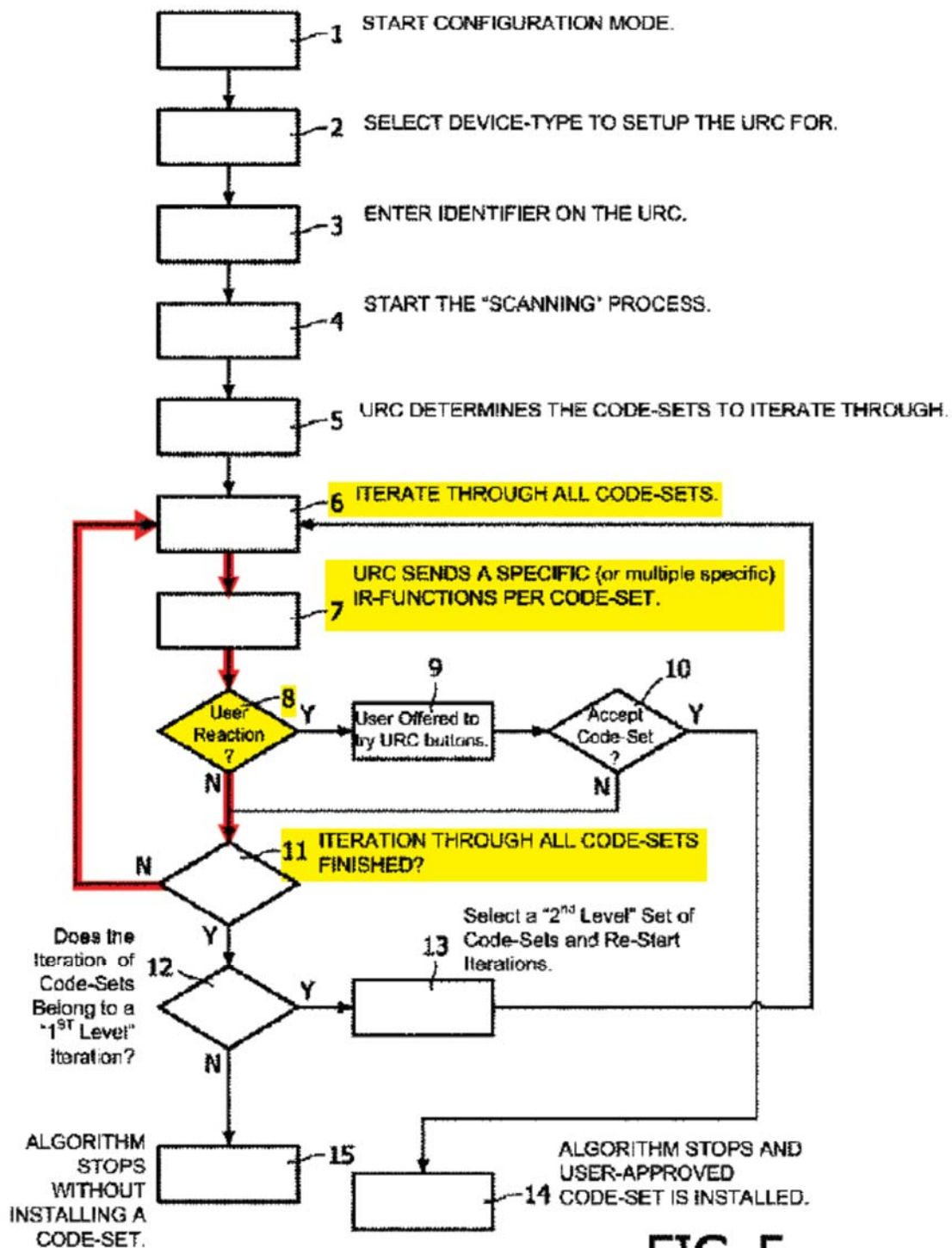


FIG. 5

Appx275 (annotated)

Claim 1 includes three steps: [a] “entering ... a configuration mode” for setting up the remote (box 1); [b] “accepting ... an identifier-entry,” which can be either a brand-identifier or a code-set-identifier (box 3); and [c] “scanning ... through remote control code-sets” (starts with box 4 and continues through next several boxes).

Limitation [c] has two sub-limitations recited in the alternative. Sub-limitation [c(1)] corresponds to a brand search, i.e., iterating through code-sets for a given brand to find a code-set that works: “in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating ... through the remote control code-sets corresponding to the brand.” This iteration is shown with the red arrows and highlighted boxes 6-11 in Figure 5 above.

Sub-limitation [c(2)] corresponds to a manual code-set-id selection, i.e., testing one specific code-set-identifier that was entered in step [b]: “in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set ..., testing the single remote control code-set.”

The parties dispute the interpretation of limitation 1[c(1)], which corresponds to the brand-search method. The key dispute is the meaning of the term “*iterating*, via the processor and memory, through the remote control code-sets corresponding to the brand.” The Commission erroneously found that the term “iterating” is so broad that it can encompass a user’s manually pressing a key repeatedly to send

codes to the target device, as is allegedly disclosed in the Philips prior art. Appx158-159. That is incorrect. The intrinsic record shows that “iterating” as used in the patent requires the repetition to be performed by the remote, and does not include a user manually pressing a key repeatedly. The extrinsic evidence, including a technical dictionary definition, shows that this interpretation is consistent with the plain meaning of “iterating” to one of ordinary skill in the art.

(a) The intrinsic record supports Roku’s interpretation of “iterating.”

“Claim construction begins with the words of the claim.” *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1148 (Fed. Cir. 2003). Roku’s interpretation—that the “iterating” is performed by the remote, not the user—is fully supported by the claim language.

Claim 1 is directed to a “method for setting up a Remote Control.” For each of the steps that follow the preamble, the claim language makes clear that *the remote* performs the step. For step [a], the remote “enter[s] ... a configuration mode.” For step [b], the remote “accept[s] ... an identifier-entry.” For step [c], the remote “scan[s] ... through remote control code-sets.” And for step [c(1)], the remote “iterat[es], via the processor and memory, through the remote control code-sets.” This interpretation is further supported by the language “iterating, *via the processor and memory*, through remote control code-sets,” which confirms that step [c(1)] is performed by the remote, not the user.

The specification further supports Roku’s interpretation. The terms “iterating,” and variants such as “iterate” and “iteration,” are used throughout the specification. All those passages show that the applicants consistently used “iterating” to mean that the remote’s software, sometimes referred to as the remote’s “algorithm,” steps through the code-sets for a brand: “The URC determines the code-sets to iterate through (step 5). If the entered ID was a pointer to a set of code-sets, the *software iterates* through all these codesets (step 6).” Appx280 (6:31-33). “[T]he *algorithm continues* with this new list *to iterate* through at step 6.” *Id.* (6:63-64). “*The algorithm iterates* through the next Code-set (step 74) For each Code-set in the *iteration, the algorithm sends* one or more IR-code(s) and wait[s] some time to give the user the chance to react (step 75).” Appx281 (7:63-67).

The patent also refers to brand-search as a type of “auto-scan,” which, by the use of the prefix “auto,” indicates that the “iteration” is *automatically* performed by software: “Then the user types the ID of the brand of his [consumer electronic] equipment and presses the device-button (TV, DVD. Sat, AMP). Then *an auto-scan starts*, but only for the code-sets for that certain brand (not for all brands as in auto-scan).” Appx278 (2:10-13).

For both the brand-search and auto-scan methods, the patent consistently states that it is the URC—not the user—that performs the iteration:

- “Then he presses a key *to start auto-scan.... The URC starts iterating* through all code-sets for the selected device and sends one or more IR-functions in the code-set (often Power-toggle or Power-off) to the equipment.” Appx278 (1:56-60).
- “*During the iteration, the URC sends* a specific (or multiple specific) IR-functions per code-set (step 7).” Appx280 (6:35-37).
- “[T]he programming of the URC will automatically go to a further scanning step where the *remote[] iterates* through all back up code-sets for the selected device-type.” Appx279 (3:61-64).

The patent teaches only two methods of performing a brand-search, and the software performs the iteration in both methods. In the first method, the user presses a button to start the iteration and a button to stop it; in the second method, the user presses and holds a button to start the iteration and releases the button to stop it. Appx280 (6:28-45).

This intrinsic evidence is dispositive even without resort to the extrinsic evidence. “[W]hen a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term by implication.” *AstraZenica LP v. Apotex, Inc.*, 633 F.3d 1042, 1052 (Fed. Cir. 2010) (citations omitted); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1272 (Fed. Cir. 2001) (“[T]he patentees defined the term ‘mode’

by implication, through the term’s consistent use throughout the ’786 patent specification”). Contrary to the ALJ’s assertion (Appx159), Roku is not improperly reading a limitation from the specification into the claim. Roku is simply using the term as it has been implicitly defined by its consistent use in the specification.

(b) The extrinsic evidence supports Roku’s interpretation of “iterating.”

The plain meaning of “iterating” to one of skill in the art can be found by consulting technical dictionaries. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) (acknowledging that “dictionaries, and especially technical dictionaries ... have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology”).

One technical dictionary defines “iteration” as “the repetition of a function or process in a computer program.” Appx25105. Roku’s expert, Prof. Ravin Balakrishnan, confirmed that this definition was consistent with the understanding of one of skill in the art. Appx10734 (841:18-842:2); Appx10927. A user pressing a key repeatedly to send codes to a target device does not meet this definition—that is not “the repetition of a function or process *in a computer program*,” but is the repetition of a *manual* process. Appx10734 (841:18-842:25).

Respondents neither disputed Roku’s dictionary definition nor presented a contrary one. Respondents’ primary argument, which the Commission accepted (Appx158), appeared to be that because software is invoked when the user presses a

key, it is the software that is doing the iterating. Appx10084-10085. But that is contrary to the unrebutted dictionary definition submitted by Roku: iteration is “the repetition of a function or process *in a computer program*,” not “the repetition of a function by means of a human action.” Prof. Balakrishnan explained how a user repeatedly pressing a button does *not* meet the claim limitation:

JUDGE MCNAMARA: Right. So it’s iterating every time you press the button, it’s the software that is actually also going through and searching, isn’t it?

PROF. BALAKRISHNAN: The user is instructing the software go to the next one, go to the next one, go to the next one, and that’s the iteration. If the user doesn’t press that channel down, it doesn’t go to the next one, which, hence, *my point that it’s not the software doing the iteration of going through the loop*. It’s the user saying next, next, next, next. And if the software does not get that keypress saying next, it doesn’t go to the next one, so it’s not doing the iteration, *it’s the user doing the iteration*.

Appx10735 (845:1-13).

2. The Commission erred in finding claim 10 anticipated.

There is no factual dispute regarding the operation of the Philips PMDVD6 remote. Roku, Respondents, and the Commission agreed that, when performing the “Code Search by Brand,” the user presses the CHANNEL UP button repeatedly until the device changes the channel. Appx156; Appx10089. The dispute is over claim construction, i.e., whether a user pressing a button repeatedly to step through the code-sets (how the PMDVD6 operates) falls within the meaning of limitation 1[c(1)] as properly construed. It does not. Claim 1, and thus dependent claim 10, are

therefore not anticipated by the PMDVD6. As noted above, the same is true for the other three cited Philips remotes, and the remaining RCA and Leapfrog prior-art references are irrelevant because UEI did not assert the RCA reference against claim 10, and the Commission determined that LeapFrog was not prior art. *See supra* pp. 10-11.

B. The Commission Erred in Determining that Claim 10 Would Have Been Obvious.

The Commission also erred in finding claim 10 obvious. “To invalidate a patent claim based on obviousness, a challenger must demonstrate by clear and convincing evidence that [1] a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that [2] the skilled artisan would have had a reasonable expectation of success in doing so.” *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012) (citations omitted). The Commission erred by (1) improperly crediting the perfunctory and conclusory testimony of Respondents’ expert regarding motivation to modify the Philips prior art, and (2) failing to make *any* finding regarding a skilled artisan’s “reasonable expectation of success.”

1. The Commission’s finding of a motivation to modify the prior art lacks substantial evidence.

The Commission erroneously found that there would have been a motivation to modify the Philips prior art to use a press-and-hold rather than having the user

press a button repeatedly to step through the code-sets. Appx160. The Commission's findings are based on a handful of conclusory passages in the testimony of Respondents' expert, Dr. Henry Houh:

1. Dr. Houh testified that, in the PMDVD6's *auto-scan* method, "some of these code-sets were probably hundreds of code-sets. So if you're scanning through, you have to press that a hundred times or more potentially. It would be very repetitive. So pressing and holding, it would be easier for the user." Appx10755 (925:13-22); Appx160. However, unlike the *brand-search* method recited in limitation 1[c(1)], in which the remote steps through code-sets for *one* specific brand, the *auto-scan* method (which is not recited in claim 1 or 10) steps through code-sets related to *every* supported brand (Appx278 (1:57-60; 2:12-13)), and thus performs a much larger number of steps. Dr. Houh's opinion that the PMDVD6's *auto-scan* method may require pressing a button hundreds of times is therefore irrelevant to a motivation to modify the PMDVD6 to use press-and-hold for the *brand-search* method recited in claims 1 and 10. Dr. Houh offered no testimony as to the number of button presses that would be required using the brand-search method. In fact, the evidence shows that the PMDVD6 has only a handful of code-sets associated with

most brands—not hundreds.⁴ Appx17139-17340. Thus, Dr. Houh’s testimony fails to provide any basis to conclude that there would have been a motivation to modify the PMDVD6 to use press-and-hold for the *brand-search* method.

2. Dr. Houh also opined that “it would just be easier to press and hold [a button] and keep it held instead of pressing it numerous times.” Appx10700 (703:1-4); Appx160. But “obviousness grounds ... cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019) (reversing obviousness finding where petitioner offered only conclusory expert testimony); *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012) (affirming finding of no motivation to combine because expert’s testimony “was conclusory and factually unsupported”).

Dr. Houh provided no articulated reason why it would “just be easier” to press and hold a button than press it several times. He even failed to address any of the reasons why the press-and-hold modification would make the setup process *more difficult*, e.g., the press-and-hold approach runs the risk of the user unintentionally

⁴ Of the approximately 200 brands of TVs supported by the PMDVD6, about 150 have four or fewer associated code-sets. Appx17139. The Emerson TV brand has 36 associated code-sets, which is by far the largest number listed for a TV brand. *Id.*

releasing the button too early or too late and thereby causing a misidentification of the correct code-set. Such unsupported and conclusory testimony cannot constitute substantial evidence of a motivation to modify.

3. Dr. Houh testified, “So [the press-and-hold method] would save some repetitive stress injury there.” Appx10700 (703:1-4); Appx160. Dr. Houh provided no support for his testimony that a POSA would have been motivated to modify the brand search method to avoid repetitive-stress injury. There was no explanation of how the rare use of a set-up procedure that requires pressing a button a few times could give rise to a repetitive-stress injury. Moreover, Dr. Houh was *not* offered as an expert in repetitive-motion disorders, and his CV and trial testimony contain no hint of any such expertise. Appx22673-22689; Appx10681-10682 (628:11-633:5).

Dr. Houh’s unsupported opinion does not constitute substantial evidence of motivation to modify. “The issue with regard to expert testimony is not the qualifications of a witness in the abstract, but whether those qualifications provide a foundation for a witness to answer a specific question.” *Berry v. City of Detroit*, 25 F.3d 1342, 1351 (6th Cir. 1994) (reversing lower court’s determination based in part on testifying expert’s lack of qualifications in specific area of expertise at issue); *Union Carbide Corp. v. Am. Can Co.*, 724 F.2d 1567, 1572 (Fed. Cir. 1984) (agreeing that little weight should be given to opinion of expert with no expertise in relevant field).

2. Respondents failed to argue and the Commission failed to find a reasonable expectation of success.

Respondents failed to argue that a skilled artisan would have had a “reasonable expectation of success,” and the Commission therefore made no finding regarding this required element of obviousness. Appx159-161; *see Eli Lilly & Co. v. Teva Pharm. Int’l GmbH*, 8 F.4th 1331, 1344 (Fed. Cir. 2021) (holding that motivation to combine and reasonable expectation of success are separate requirements, and the patent challenger must prove both to establish obviousness). Dr. Houh’s testimony provides no such evidence because he did not testify whether a POSA modifying the PMDVD6 to use a press-and-hold would have had a “reasonable expectation of success.” Indeed, Respondents made no mention at all of this required element in their post-hearing briefing. Appx10064-10137. *See Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 162 (Fed. Cir. 2021) (reversing PTAB’s finding of reasonable expectation of success because “[t]he only support for such a finding is pure conjecture coupled with hindsight reliance on the teachings in the [asserted] patent”).

3. The Commission’s obviousness determination relied on improper hindsight.

By relying on Dr. Houh’s conclusory and factually unsupported testimony that it would “just be easier” to press and hold a button, and his testimony regarding the auto-scan set-up method unrelated to claim 10, the Commission fell into the error of

hindsight bias. The Commission used hindsight to reach the claimed invention by taking something it alleges is in the prior art (press-and-hold) and adding it to other prior art without a proper motivation to modify. “We must still be careful not to allow hindsight reconstruction of references to reach the claimed invention without any explanation as to how or why the references would be combined to produce the claimed invention.” *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 n.3 (Fed. Cir. 2008) (affirming exclusion of expert’s “vague and conclusory obviousness testimony which did not offer any motivation for one skilled in the art to combine the particular references he cites in order to practice the claimed method”).

The Commission also erred when it found that “the proposed modification is not improper hindsight because it uses knowledge within the level of ordinary skill at the time the invention was made.” Appx161. To avoid improper hindsight, it is not sufficient to show that the proposed modification is within the level of ordinary skill at the time of the invention, i.e., that the modification *could* have been made by a skilled artisan. “[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (citations omitted).

For all of the foregoing reasons, the Commission’s invalidity determination should be reversed.

II. THE COMMISSION ERRONEOUSLY INTERPRETED SECTION 337 WHEN IT HELD THAT ROKU HAD TO SHOW A DOMESTIC INDUSTRY IN THE PROCESS OF BEING ESTABLISHED AS OF THE DATE OF THE COMPLAINT.

The Commission erroneously determined that Roku failed to show a domestic industry in the process of being established. In making this determination, the Commission improperly held that satisfaction of the domestic industry requirement must be determined as of the date of the complaint, unless there are significant and unusual developments, and that Roku's ongoing development activities after the filing of the complaint were not shown to be "significant and unusual." Appx20-21. The Commission's erroneous interpretation and its resulting refusal to consider Roku's development activities after the date of the complaint severely prejudiced Roku's ability to show the existence of a domestic industry in the process of being established.

A. Under the Proper Interpretation of the Statute, a Complainant Can Rely on Evidence After the Date of the Complaint to Show a Domestic Industry in the Process of Being Established.

The plain language of section 337 makes clear that the assessment of a domestic industry in the process of being established should be made based on all of the evidence of record, including evidence regarding events occurring after the date of the complaint. This interpretation is also supported by the standard historical practice, the legislative history of the statute, and the Commission's interpretation of other portions of the statute.

1. The statute’s plain language makes clear that the assessment is to be made as of the close of the evidentiary record.

Statutory construction begins with the language of the statute in question. *See Hughes Aircraft Co. v. Jacobson*, 525 U.S. 432, 438 (1999). Viewed through the lens of appropriate canons of interpretation, section 337’s plain language makes it clear that, in determining whether an industry in the process of being established exists, evidence regarding development activities through the close of the evidentiary record should be considered. Sections 337(a)(1) provides that certain “activities are unlawful, and when found by the Commission *to exist* shall be dealt with ... as provided in this section.” 19 U.S.C. § 1337(a)(1). Those unlawful activities include importation into the United States, and sale after importation, of articles that infringe a valid and enforceable U.S. patent. *Id.* § 1337(a)(1)(B). That subparagraph applies “only if *an industry in the United States*, relating to the articles protected by the patent ... exists or *is in the process of being established*.” *Id.* § 1337(a)(2).⁵

The phrase “*is in the process of being established*” in subsection (a)(2) is not defined in the statute and must be “construed in accordance with its ordinary or

⁵ This provision is referred to as the domestic industry requirement and can be satisfied by showing either: (1) an industry already exists, or (2) an industry is in the process of being established. This case involves only an industry in the process of being established.

natural meaning,” *FDIC v. Meyer*, 510 U.S. 471, 476 (1994), “giv[ing] effect, if possible, to every clause and word of [the] statute,” *United States v. Menasche*, 348 U.S. 528, 538-39 (1955) (citation omitted). The phrase is stated in an active and ongoing present tense, indicating that there should be no artificial cutoff of evidence as of the date of the complaint. To the contrary, the natural reading of the language clearly implies the industry’s status should be evaluated based on the fullness of the record regarding the complainant’s past and current activities through the end of the evidentiary record. To read the language otherwise would blur the distinction between an “existing” domestic industry and one “in the process of being established.”

Even the Commission recognizes this distinction. For example, in clarifying the prefatory language of section 337(a)(3), the Commission has explained that “[i]f a complainant cannot demonstrate the existence of articles protected by the patent, the complainant *must instead* show a domestic industry is in the process of being established.” *Certain Integrated Circuit Chips*, Inv. No. 337-TA-859, Comm’n Op. at 47 n.22, 2014 WL 12796437, *27 (Aug. 22, 2014).

The Court should also interpret this phrase in the context of section 337 as a whole. *King v. Burwell*, 576 U.S. 473, 486 (2015) (holding that words should be interpreted “in their context and with a view to their place in the overall statutory scheme.” (cleaned up)). Section 337(c) states that “[t]he Commission *shall*

determine, with respect to each investigation conducted by it under this section, whether or not there *is* a violation of this section.” That the statute specifies “there *is* a violation” in the present tense—not “there *was* a violation” in the past tense—indicates the violation is to be assessed as of the close of the evidentiary record. Further, section 337(d)(2) also uses the present participle: “The authority of the Commission to order an exclusion from entry of articles shall be limited to persons determined by the Commission *to be violating* this section.” Each of these provisions indicates that Congress intended for the Commission to make judgments regarding violations—including the determination of a domestic industry “in the process of being established”—as of the close of the evidentiary record.⁶

⁶ There is a narrow exception to this general rule. This Court has held that, consistent with congressional intent, in the context of an *existing* domestic industry that was destroyed between the filing of the complaint and the close of the evidentiary record, the existence of a domestic industry should be assessed as of the date of the complaint to avoid an anomalous result. *See Bally/Midway Mfg. Co. v. ITC*, 714 F.2d 1117, 1121 (Fed. Cir. 1983) (noting that Congress could not have intended “that the infringing importers whose unfair practices were most effective, i.e., those who succeeded in destroying their American competition, would be treated more favorably than those whose unfair practices were less successful”). That same narrow exception may also apply to an industry *in the process of being established* when unfair competition has destroyed the patent owner’s efforts to establish a domestic industry between the filing of the complaint and the close of the evidentiary record.

2. Congress did not alter the normal rule that the right to relief on an equitable claim can be shown using events occurring after the date of the complaint.

The foregoing analysis of section 337's plain language is buttressed by the background principle, left unchanged by Congress, that the right to relief on claims sounding in equity can be based on post-complaint events. In interpreting statutes, courts must "take into account [the] contemporary legal context" at the time the statute was passed, as Congress "expect[s] its enactment [of a statute] to be interpreted in conformity with" existing legal precedents. *Cannon v. Univ. of Chicago*, 441 U.S. 677, 699 (1979).

When section 337 was first enacted in 1930, as well as when its predecessor—section 316 of the Tariff Act of 1922—was passed, Congress would have expected these sections to be interpreted consistent with the then-existing practice of courts in equity. In particular, Congress would have recognized that the remedies provided by these sections—an order excluding products from entry—would have been injunctive in nature. *See Spansion, Inc. v. ITC*, 629 F.3d 1331, 1357-60 (Fed. Cir. 2010) (characterizing the Commission's remedies as a form of "injunctive relief"). Indeed, the 1922 and 1930 Tariff Acts predated the merger of law and equity in the federal district courts in 1938 with the adoption of the Federal Rules of Civil Procedure. *See Letter of Transmittal to Congress*, 308 U.S. 647 (1938).

Moreover, when the Tariff Acts of 1922 and 1930 were passed, patent-infringement actions were overwhelmingly brought in equity. Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 Yale L.J. 848, 912-13 (2016). At that time, unfair competition law also sounded in equity. *See Int'l News Serv. v. Assoc. Press*, 248 U.S. 215, 236-40 (1918).

Thus, in drafting section 337, Congress would have expected that it would be interpreted according to the well-established principle that entitlement to equitable relief—particularly prospective remedies—should be determined based on the facts as they exist *at the time of trial or final judgment*. *See* Restatement (First) of Torts § 935 (1939) (recognizing that, as to the “time of testing appropriateness” of injunctive relief, “the factors of appropriateness [for an injunction] ... are appraised as of the time of the order or judgment”); Restatement (Second) of Torts § 935 (1979) (same).

The Supreme Court, lower federal courts, and state courts have long recognized that the right to relief should be determined based on the facts as they exist at the time of trial, not as of the date of the complaint. *See, e.g., William R. Warner & Co. v. Eli Lilly & Co.*, 265 U.S. 526, 531 (1924) (“The charge of unfair competition being established, it follows that equity will afford relief by injunction to prevent such unfair competition for the future.”); *United States v. Gen. Dynamics Corp.*, 415 U.S. 486, 505 (1974) (observing that “the essential question remains

whether the probability of such future [anticompetitive] impact exists at the time of trial”); *Champion Spark Plug Co. v. Reich*, 121 F.2d 769, 772 (8th Cir. 1941) (“If the menace exists an injunction should be granted; if not, it should be denied. The question is one of fact for the determination of the court at the time the final decree is entered.”); *Collins v. Sargent*, 264 P. 776, 779-80 (Cal. Ct. App. 1928) (“In an action for injunction the issues are to be determined on the basis of the situation as it exists at the time of the trial, not at the time of bringing the action,” as “[e]quity will administer such relief as the exigencies of the case demand at the close of the trial.”). In short, “equity acts in the present tense” and “mold[s] the decree to actualities”—“not history” existing at the time “when [a] bill [of equity was] filed.” *Cont’l Sec. Co. v. Interborough Rapid Transit Co.*, 207 F. 467, 471 (S.D.N.Y. 1913).

Congress would have expected this well-known principle of equity to be followed in section 337 proceedings. Congress’s silence as to any other temporal standard reflects Congress’s expectation that the facts relevant to the existence of a section 337 violation, including whether a domestic industry exists or is in the process of being established, should be evaluated based on the facts as they exist at the close of the evidentiary hearing.

3. The legislative history demonstrates that Congress intended to allow complainants to use evidence after the date of the complaint to prove a domestic industry in the process of being established.

Beyond the statutory language, a court also may consult the legislative history to confirm a statute's meaning. *See Shell Oil Co. v. Iowa Dep't of Revenue*, 488 U.S. 19, 26 (1988). The discussion of the phrase an "industry ... in the process of being established" in the Senate and House committee reports confirms that Roku's interpretation is correct. The use of the present tense in these reports makes clear that this statutory language was intended to provide quicker access to relief for patent owners who had a nascent developing industry that was under threat.

For example, in discussing the Omnibus Trade Act that ultimately resulted in section 337's provision on an "industry ... in the process of being established," the Senate Committee on Finance explained that "[t]he phrase 'or in the process of being established' with regard to the industry requirement recognizes that there may be situations where, under the above definition, an industry does not currently 'exist' but a party should nevertheless be entitled to bring a section 337 action." S. Rep. No. 100-71, at 129-30 (1987); *see also* H.R. Rep. No. 100-40, pt. 1, at 157-58 (1987) (same). As an example, the Committee stated that "if a new product is developed in the United States and is protected by a U.S. intellectual property right, the owner of the intellectual property right *would not have to wait* to bring an action under section 337 until he can satisfy the definition of industry, if he can demonstrate that *he is*

taking the necessary tangible steps to establish such an industry in the United States.”

Id. The Committee continued, “The owner of the intellectual property right *must be actively engaged in steps leading to the exploitation* of the intellectual property, including application engineering, design work, or other such activities. The Commission should determine whether the steps *being taken* indicate a significant likelihood that the industry requirement will be satisfied in the future.” *Id.* The Committee emphasized that it “intend[s] this language ... to protect from infringement those holders of U.S. intellectual property rights *who are engaged in activities* genuinely designed to exploit their intellectual property *within a reasonable period of time.*” *Id.*

Like the statute, the legislative history refers in the *present tense* to the steps being taken for a domestic industry in the process of being established. Such an industry by definition is *still* developing, and its assessment necessarily involves the consideration of post-complaint activities. If this were not true, there would be little difference in the standards of proof for an *established* domestic industry versus an industry in the process of *being established*.

Precluding complainants from relying on post-complaint activities would force patent owners facing unfair competition to delay seeking relief and allow further harm to accrue to their developing businesses before being able to file suit. Congress could not have intended to require such delay given its acknowledgment

that “in the process of being established” was included so that a patent owner would “*not have to wait*” to bring an action under section 337 if “he *is taking* the necessary tangible steps to establish such an industry in the United States.” *Id.*

Finally, Roku’s interpretation, which strengthens a complainant’s ability to show a domestic industry in the process of being established, is supported by Congress’s overall policy objective in adding that provision. In 1988, Congress amended section 337 by removing the requirement to show injury to a domestic industry for claims based on patent infringement and replacing it with the requirement to merely show that “an industry ... exists or is in the process of being established.” *See Omnibus Trade and Competitiveness Act of 1988*, Pub. L. No. 100-418, 102 Stat. 1107 (1988) (codified at 19 U.S.C. § 1337(a)(2)-(3)). As this Court has recognized, “[t]he ‘fundamental purpose’ of the 1988 amendment was to ‘strengthen the effectiveness of section 337’ against the ‘importation of articles which infringe U.S. intellectual property rights.’” *Suprema, Inc. v. ITC*, 796 F.3d 1350, 1351 (Fed. Cir. 2013) (quoting H.R. Rep. No. 100-40, pt. 1, at 155 (1987)). In contrast, the Commission’s interpretation weakens the effectiveness of section 337 by making it harder for a complainant to show a domestic industry in the process of being established.

4. Roku’s interpretation is consistent with the Commission’s interpretation of other elements of section 337 where the Commission routinely considers post-complaint evidence.

Roku’s interpretation is also consistent with the Commission’s interpretation of other aspects of section 337. *See K Mart Corp. v. Cartier, Inc.*, 486 U.S. 281, 291 (1988) (“In ascertaining the plain meaning of the statute, the court must look to the particular statutory language at issue, as well as the language and design of the statute as a whole.”). In particular, with respect to section 337’s “importation” and “infringement” requirements, the Commission routinely considers post-complaint activity.

For example, the Commission regularly allows discovery and adjudicates section 337 violations as to accused products that were created and imported after the date of the complaint. *See, e.g., Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, Comm’n Op. at 19, 24-25, 1997 WL 35430125, *9, *11 (June 26, 1997) (adjudicating new products under development that were not imported by date of complaint); *Certain Elec. Devices for Capturing & Transmitting Images, & Components Thereof*, Inv. No. 337-TA-831, Order No. 33 at 10, 2012 WL 5425441, *6 (Oct. 12, 2012) (ordering discovery of products under development likely to enter United States before close of evidentiary record); *Certain Flash Memory Chips & Prods. Containing the Same*, Inv. No. 337-TA-664,

Order No. 48 at 2-4, 2010 WL 1413240, *1-2 (Mar. 23, 2010) (allowing discovery of chips under development despite lack of importation before date of complaint).

The Commission also regularly adjudicates infringement by redesigned products that did not even exist when the complaint was filed. *See, e.g., Certain Human Milk Oligosaccharides & Methods of Producing the Same*, Inv. No. 337-TA-1120, Comm’n Op. at 18-19, 2020 WL 3073788, *11 (June 8, 2020) (setting forth factors relevant to whether a redesign will be adjudicated).

Additionally, the Commission adjudicates section 337 violations based on acts of contributory and induced infringement occurring after the filing of the complaint. In particular, the Commission allows the complaint itself to provide respondents with knowledge of the asserted patent such that respondents’ actions after receiving the complaint can constitute acts of contributory and induced infringement. *See Certain Beverage Brewing Capsules, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-929, Comm. Op. at 18-19, 2016 WL 9751230, *10 (Apr. 5, 2016) (finding that complaint can “satisfy the ‘knowledge of the patent requirement’ for both induced and contributory infringement”); *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm. Op. at 41, 2015 WL 6755093, *23 (Oct. 30, 2015) (concluding “that service of a section 337 complaint can be adequate to provide knowledge of the asserted patents”).

B. The Commission’s Holding that a Domestic Industry in the Process of Being Established Must Be Assessed as of the Date of the Complaint Unless There Is a “Significant and Unusual Development” Is Not Entitled to Deference.

The Commission’s “date-of-the-complaint” interpretation is not entitled to any deference and is subject to review *de novo*. See *Farrel Corp. v. ITC*, 949 F.2d 1147, 1151-52 (Fed. Cir. 1991) (absent deference “this court generally reviews ITC interpretations of statutory provisions *de novo*”). In particular, deference to an agency’s construction of a statute under *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984), is not likely to survive the Supreme Court’s October 2023 Term, and, even if it does, it should not apply to the Commission’s interpretation here.

1. *Chevron* deference may soon be abrogated by the Supreme Court.

Roku respectfully submits that *Chevron* deference may soon be abrogated entirely and should not be applied in this case. In *Loper Bright Enterprises v. Raimondo*, 143 S. Ct. 2429 (May 1, 2023), the Supreme Court granted certiorari on the petitioners’ second question presented, which included whether “the Court should overrule *Chevron*.” Petition for Writ of Certiorari at i–ii, No. 22-451 (Nov. 10, 2022), 2022 WL 19770137. The petition argues that “the Court should overrule that decision [in *Chevron*] or at least clarify its limits,” *id.* at 28, pointing out that, “[g]iven the manifold problems with *Chevron* recognized by members of this Court,

it is understandable that the Court has declined to mention *Chevron* even in cases where it is directly at issue. But ... lower courts continue to feel obligated to apply it because the Court has not yet formally overruled it.” *Id.* at 29 (cleaned up). *Loper Bright* may represent the occasion on which the Supreme Court formally overrules *Chevron*, and Roku formally preserves that issue in the event it does.

2. *Chevron* deference does not apply because the Commission’s interpretation does not reflect agency expertise.

Even if *Chevron* deference were to survive *Loper Bright*, it should not apply here because this Court has “decline[d] to defer to [an agency] on [an] issue of statutory interpretation—a pure question of law that is not within the specific expertise of the agency.” *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1352 (Fed. Cir. 2020) (additional views). “The point of *Chevron* is to encourage courts to defer to agencies on issues that ‘implicate[] agency expertise in a meaningful way.’” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1324 (Fed. Cir. 2017) (en banc) (Moore, J., specially concurring). Whether a complainant can rely on events occurring after the date of a complaint is a question of law that does not require substantive agency expertise. Instead, it is among the adjudicative-process “issues that seem to reside firmly within the expertise of Article III courts.” *Id.* (“Pure questions of law—such as the substantive burden of proof or persuasion ... —are not issues that implicate the PTO’s expertise”).

3. *Chevron* deference does not apply because Congress has spoken to the issue and the Commission's interpretation is not reasonable.

Chevron deference also does not apply here because “Congress has directly spoken to the precise question at issue” and “the court must give effect to the unambiguously expressed intent of Congress.” *Kyocera Wireless Corp. v. ITC*, 545 F.3d 1340, 1355 (Fed. Cir. 2008) (quotations omitted). Moreover, even if the statute were ambiguous, the Commission's interpretation is not entitled to deference because it is not reasonable. *Id.*

First, as discussed above, the plain language of the statute, buttressed by the legislative history and precedential context, makes clear that Congress intended the assessment of a domestic industry in the process of being established to be made as of the close of the evidentiary record, not as of the date of the complaint. *See supra* pp. 34-42.

Second, the Commission's interpretation is unreasonable and not entitled to deference. *Farrel Corp.*, 949 F.2d at 1151-52. In determining whether an agency interpretation is reasonable, the court must “honor the clear meaning of a statute, as revealed by its language, purpose, and history.” *Al Tech Specialty Steel Corp. v. United States*, 745 F.2d 632, 642 (Fed. Cir. 1984). The Commission's interpretation finds *no* basis in the provision's plain language. *See Se. Cmty. Coll. v. Davis*, 442 U.S. 397, 411-412 (1979) (deference requires support in the statutory language);

Suprema, 796 F.3d at 1349 (requiring consistency with statutory language to be reasonable). Nor does it find support in the language of section 337 as a whole. *Id.* (requiring consistency with “text of section 337 as a whole” to be reasonable). Nor does it find support in the legislative history. *See Se. Cmty. Coll.*, 442 U.S. at 411-12 (deference requires support in the legislative history); *Suprema*, 796 F.3d at 1349 (requiring consistency with legislative history to be reasonable). Indeed, the Commission’s interpretation would frustrate Congress’s expressed intent to strengthen the effectiveness of section 337 and provide quicker access to relief for patent owners in the process of establishing a domestic industry. *See S. Rep. No. 100-71*, at 128-30; *H.R. Rep. No. 100-40*, pt. 1, at 155-58.

4. *Chevron* deference does not apply because the Commission’s interpretation has been applied in an inconsistent and arbitrary manner, not as the result of thorough legal reasoning.

(a) The Commission’s interpretation has been inconsistently and arbitrarily applied.

The unreasonableness of the Commission’s interpretation and inappropriateness of *Chevron* deference also flow from the Commission’s lack of “consistency” in that interpretation. *Suprema*, 796 F.3d at 1350-51; *Good Samaritan Hosp. v. Shalala*, 508 U.S. 402, 417 (1993) (“An agency interpretation of a relevant provision which conflicts with the agency’s earlier interpretation is ‘entitled to considerably less deference’ than a consistently held agency view.” (quotation

omitted)). The Commission's ad hoc interpretation has been inconsistently and arbitrarily applied for decades.

A review of the genesis of the Commission's "date-of-the-complaint" interpretation is telling. In its Opinion, the Commission cited as its primary support a footnote in *Motiva, LLC v. ITC*, 716 F.3d 596 (Fed. Cir. 2013). Appx20. But in *Motiva*, this Court did not pronounce a general rule; it merely affirmed "the use of the date of the filing of Motiva's complaint *in this case*." *Motiva*, 716 F.3d at 601 n.6.⁷ Moreover, *Motiva* relied on *Bally/Midway Manufacturing Co. v. ITC*, 714 F.2d 1117 (Fed. Cir. 1983), which similarly did not set forth a general rule.

In *Bally*, this Court sought to protect the complainant who had a domestic industry at the time of the complaint but lost it due to the respondents' unfair acts. *Id.* at 1121-22. This Court concluded that "*in the circumstances of this case* the proper date for determining [domestic industry] was the date on which the complaint was filed rather than the date on which the Commission rendered its decision." *Id.* at 1121. Notably, the *Bally* court did not preclude the Commission's use of the close

⁷ Additionally, the issue of using the complaint's filing date rather than the close of the evidentiary record was not even presented in *Motiva* because the complainant had discontinued its domestic-industry development efforts three years before filing the complaint. 716 F.3d at 601 n.6. This Court decided only between the date of the complaint and the date three years earlier when the complainant ceased its prior efforts. *See id.* Looking to when the evidentiary record closed would not have changed the result.

of the evidentiary record as the date for determining domestic industry in other cases.⁸

A survey of the cases since *Bally* shows that the date the Commission uses has been remarkably inconsistent. Initially, the Commission used the date of the complaint. *See, e.g., Certain DRAMs, Components and Products Containing the Same*, Inv. No. 337-TA-242, Comm’n Op. at 72, 1987 WL 450856, *30 (Sept. 21, 1987) (citing *Bally* and stating that “[t]he Commission determines the existence of a domestic industry *as of the time the complaint is filed*”). But in the first case to address this issue after the 1988 amendments, the Commission stated that “we assess the existence of the domestic industry *as of the discovery cutoff date* prior to the evidentiary hearing,” and “do *not* adopt the ALJ’s finding that the date of the last supplement to the complaint is significant in determining what evidence of domestic industry may be adduced to prove the existence of a domestic industry.” *Certain Concealed Cabinet Hinges and Mounting Plates*, Inv. No. 337-TA-289, Comm’n Op. at 21, 1990 WL 10608981, *11 (Jan. 8, 1990).

Subsequent cases have been similarly inconsistent. For example, the Commission has repeatedly disregarded the date-of-the-complaint interpretation and instead:

⁸ Additionally, the *Bally* court did not address the “in the process of being established” language because that provision was added to section 337 several years later.

- looked to the deadline for prehearing statements as a potentially relevant time;⁹
- considered events that occurred after the evidentiary hearing;¹⁰
- rejected the proposition that *Bally* generally required use of the date of the complaint, and cited its prior use of “the end of discovery as the cut-off point” because “[t]he rationale for the Federal Circuit’s ruling was to expand the scope of the domestic industry requirement, not limit it”;¹¹
- analyzed evidence of ongoing activities through the close of the evidentiary record;¹²
- recognized that “it has been acceptable to look later in the investigation” if the evidence is “new, relevant and timely disclosed”;¹³ and

⁹ *Certain Catalyst Components & Catalysts for Polymerization of Olefins*, Inv. No. 337-TA-307, Order No. 13, 1990 WL 710647, *1 (Mar. 23, 1990).

¹⁰ *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Comm. Op. at 15-18, 1996 WL 1056209, *9-10 (Sept. 23, 1996).

¹¹ *Certain Laser Imageable Lithographic Printing Plates*, Inv. No. 337-TA-636, Initial Determination at 93-94, 2009 WL 2428362, *58 (July 24, 2009).

¹² *Certain Semiconductor Integrated Circuits and Products Containing Same*, Inv. No. 337-TA-665, Initial Determination at 230, 2009 WL 5942422, *131 (Oct. 14, 2009).

¹³ *Certain Electronic Devices. Including Mobile Phones, Portable Music Players, and Computers*, Inv. No. 337-TA-701, Order No. 58 at 6, 2010 WL 5621540, *4 (Nov. 18, 2010).

- allowed discovery on post-complaint activities because “[t]here are times when the existence of a domestic industry can be based on evidence after the date of the complaint was filed.”¹⁴

Yet, in other subsequent cases, the Commission has ruled that “[t]he date for determining whether an industry exists is the filing date of the complaint”¹⁵ and that “only activities that occurred before the filing of a complaint with the Commission are relevant.”¹⁶

The second part of the Commission’s interpretation—that post-complaint activities can be considered only if the complainant shows that “a significant and unusual development has occurred after the complaint has been filed”—also has been applied inconsistently. Indeed, the origin of the Commission’s “significant and unusual development” exception is revealing. As support for the purported exception, the Commission cites *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm’n Op. at 72, 2015 WL 6755093, *36 (Oct. 30, 2015) (Appx20), which in turn cites *Certain Video*

¹⁴ *Certain In-line Roller Skates with Ventilated Boots and In-line Roller Skates with Axle Aperture Plugs and Component Parts Thereof*, Inv. No. 337-TA-348, Order No. 10 at 3, 1993 WL 852786, *2 (June 30, 1993).

¹⁵ *Certain CD-ROM Controllers and Products Containing the Same-II*, Inv. No. 337-TA-409, Comm’n Op. at 37, 1999 WL 956174, *17 (Oct. 18, 1999).

¹⁶ *Certain Coaxial Cable Connectors and Components Thereof and Products Containing Same*, Inv. No. 337-TA-650, Comm’n Op. at 51 n.17, 2010 WL 9943673, *30 (Apr. 14, 2010).

Game Systems and Controllers, Inv. No. 337-TA-743, Comm’n Op. at 5, 2012 WL 13171643, *3 (Jan. 20, 2012). But in *Certain Video Game Systems*—the first case in which a “significant and unusual development” was mentioned in connection with reliance on post-complaint evidence—the Commission was not setting forth any kind of test, and was simply summarizing and characterizing the situations in which post-complaint evidence had been used, and gave “significant and unusual development” as an “example.” *Id.* at 5, 2012 WL 13171643, *3. Later in the same opinion, the Commission made clear it was not setting forth a “significant and unusual development” test since it broadly stated that the Commission may consider post-complaint activities and investments “*in appropriate situations based on the specific facts and circumstances of an investigation.*” *Id.* at 5-6, 2012 WL 13171643, *3. Indeed, the Commission cited favorably to a case that identified “the development of new, relevant and timely disclosed evidence” as a sufficient reason to consider post-complaint evidence. *Id.* (citing *Certain Electronic Devices, Including Mobile Phones, Portable Music Players, and Computers*, Inv. No. 337-TA-701, Order No. 58 at 6, 2010 WL 5621540, *4 (Nov. 18, 2010)). Thus, the Commission’s own precedent shows that the existence of a “significant and unusual development” is just one example of many situations in which the Commission has considered post-complaint evidence of domestic industry.

Therefore, it is not surprising that the Commission has been inconsistent and arbitrary as to whether the existence of a “significant and unusual development” is the touchstone for consideration of post-complaint evidence. For example, the Commission

- has stated that it “typically looks to the time a complaint is filed, but there have been a number of instances when it has been acceptable to look later in the investigation, either because of the development of new, relevant and timely disclosed evidence or because there is evidence that a complainant’s domestic industry is dwindling”;¹⁷
- “has examined the existence of a domestic industry at various points in the investigation timeline, depending on the circumstances of the case”;¹⁸ and
- affirmed the ALJ’s finding of economic domestic industry without comment on the timing issue where the ALJ allowed post-complaint

¹⁷ *Certain Electronic Devices, Including Mobile Phones, Portable Music Players, and Computers*, Inv. No. 337-TA-701, Order No. 58 at 6, 2010 WL 5621540, *4 (Nov. 18, 2010).

¹⁸ *Certain Electronic Imaging Devices*, Inv. No. 337-TA-726, Order No. 18 at 9, 2011 WL 826919, *4 (Feb. 7, 2011).

evidence without a showing of any significant and unusual development.¹⁹

Given the Commission's inconsistent and arbitrary rulings regarding consideration of post-complaint evidence, its current interpretation is not entitled to *Chevron* deference.

(b) The Commission's rule is not based on any thorough legal reasoning.

Finally, the Court should accord no deference because the Commission's inconsistent and arbitrary application of its interpretation reflects that the Commission did not reach this interpretation after any thorough legal reasoning. *See Barnhart v. Walton*, 535 U.S. 212, 222 (2002) (noting whether agency has given "careful consideration" of "the question over a long period of time" as a factor in level of deference to be given); *Gen. Elec. Co. v. Gilbert*, 429 U.S. 125, 142 (1976) (recognizing that courts consider the "thoroughness evident in [the agency's] consideration" (quotation omitted)). As explained above, the Commission's precedent is bereft of any meaningful explanation of the basis of its interpretation. The Commission's bare citation to this Court's decision in *Bally* for a purported rule that *Bally* never announced is no substitute for the kind of thorough legal analysis

¹⁹ *Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet Computers*, Inv. No. 337-TA-794, Initial Determination at 599–600, 2012 WL 4752221, *319-320 (Sept. 14, 2012).

Chevron deference requires. *See Certain Coaxial Cable Connectors and Components Thereof and Products Containing Same*, Inv. No. 337-TA-650, Comm’n Op. at 51 n.17, 2010 WL 9943673, *30 (Apr. 14, 2010).

C. The Commission’s Refusal to Consider Events Occurring After the Date of the Complaint Was Prejudicial.

The Commission’s failure to consider Roku’s post-complaint evidence was prejudicial. *See* 5 U.S.C. § 706 (requiring “due account” to be “taken of the rule of prejudicial error” in review under the APA); *Shinseki v. Sanders*, 556 U.S. 396, 406, 409 (2009) (explaining that § 706 requires application of “the same kind of ‘harmless-error’ rule that courts ordinarily apply in civil cases”). An industry is “in the process of being established” if the patent owner “demonstrate[s] that he is taking the necessary tangible steps to establish such an industry in the United States,” and there is a “significant likelihood that the industry requirement will be satisfied in the future.” *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Comm’n Op. 13-16, 2008 WL 2139143, *8-10 (May 16, 2008). The Commission’s failure to consider Roku’s post-complaint development activities prejudiced Roku by excluding almost all of the evidence showing that Roku had satisfied these requirements.

1. The post-complaint evidence showed Roku was taking the necessary tangible steps.

The post-complaint evidence ignored by the Commission established that Roku was taking the necessary tangible steps to develop Gazelle. In May 2021, Roku started work on a number of the Gazelle's key aspects. For example, Roku began work on selecting Gazelle's microprocessor and expected to have a sample microprocessor in December 2021. Appx10487-10488 (92:14-93:12); Appx18229. Roku also started research regarding user interaction with Gazelle. Appx10488 (93:13-21); Appx18230. Work on the industrial design, which takes into account the necessary buttons and internal hardware requirements, also began in May 2021, and numerous iterations of the potential design were generated and evaluated, resulting in a physical sample being produced in September 2021. Appx10488 (93:22-94-9, 94:10-95:7, 95:24-96:5); Appx18230; Appx17171; Appx12147. The final version of the industrial design that was used for production of Gazelle was locked-in on October 5, 2021. Appx10488 (96:6-8).

In June and July 2021, Roku started work on moving the infrared databases onto Elk and Falcon. Appx10488 (96:9-22); Appx18226; Appx24064-24065. This relocation was necessary to implement the Feature Guide functionality in Gazelle. Appx10488 (96:16-20); Appx24064-24065. As of the close of fact discovery, the source-code enabling operation of the infrared databases was almost complete, and was expected to be released on Elk and Falcon before commercialization of Gazelle.

Appx10488-10489 (96:23-97:20); Appx24064-24065. In August 2021, Roku started work on removing the pairing button, which was one of the changes to meet Roku's cost-reduction objectives. Appx10489 (98:8-22); Appx18279. And, in September 2021, Roku prepared a draft of explicit mappings of Gazelle button sequences to code-set-ids for implementing the Feature Guide. Appx10489 (98:23-99:12).

Finally, before the close of fact discovery Roku put in place approved formal milestones for the development of all aspects and features of Gazelle through the scheduled October 2022 commercial-shipment date. Appx10486-10487 (87:25-91:4); Appx18750-18751; Appx18710. For example, Engineering Validation Test ("EVT") was scheduled to start on November 23, 2021; Design Validation Test ("DVT") was scheduled to start on October 5, 2021; Product Validation Test ("PVT") was scheduled to start on March 21, 2022; and Mass Production ("MP") was scheduled to start on May 18, 2022. *Id.*

2. The post-complaint evidence showed a significant likelihood the technical domestic industry requirement would be satisfied in the future.

The post-complaint evidence disregarded by the Commission further established a "significant likelihood that the industry requirement will be satisfied in the future," as required by the second part of the Commission's two-part test for an industry in the process of being established. *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Comm'n Op. 13-16, 2008 WL

2139143, *8-10 (May 16, 2008). For example, Roku's economic expert, Dr. Michael Akemann, testified that the documents he reviewed "suggest that Roku has indeed been taking tangible steps to develop the Gazelle Remote" and are "consistent with the conclusion that there's a significant likelihood that a domestic industry will be established later this year." Appx10593 (399:11-22). The weekly meeting notes and the facts relating to Roku's being on track to meet the engineering milestones directly supported his opinion. *Id.* Appx10592-10593 (395:4-13, 396:4-397:25, 399:11-22).

In rendering his opinions, Dr. Akemann took into consideration that, as of the close of fact discovery, a prototype of Gazelle had not yet been completed and that the specific source code for the Feature Guide had not yet been written. Appx10591 (392:4-393:7). He opined that there was nothing inconsistent about these steps not being completed and an overall finding of domestic industry, stating the following regarding the source code:

Well, there was nothing inconsistent with that fact and my opinion here. As I understand it, based on the work that I've done, Roku is following its normal process for developing Gazelle and there's a certain sequence to the R&D and development steps that need to be undertaken in a particular sequence. And so I didn't find that surprising, and it seems consistent with the current plan to meet the targeted release date.

Id. (392:10-18).

The Gazelle project management page further confirmed satisfaction of the significant likelihood requirement by showing that the development milestones were on track as of the close of fact discovery. Appx18749-18751. As Roku's lead engineer testified, all of these milestones were on track and expected to be completed by the specified dates. Appx10487 (91:5-11). In other words, as of the close of fact discovery, Roku had accomplished all of the necessary steps that were scheduled to have occurred by that date and Roku was on track to make Gazelle commercially available in October 2022.

3. The ALJ's per se exclusion of events occurring after the fact discovery cutoff constitutes additional prejudicial error.

Although (unlike the Commission) the ALJ considered post-complaint evidence, the ALJ prejudiced Roku's showing by refusing to consider evidence regarding events occurring after the close of fact discovery based on the ALJ's mistaken belief that Commission precedent substantively precluded consideration of such evidence on the issue of domestic industry. Appx10679 (620:18-623:20); Appx228 (n.7). Instead of applying a per se rule, the ALJ should have applied the normal test for determining whether to allow new evidence after the close of discovery, which looks to the existence of good cause and the absence of undue prejudice. *See, e.g., Certain Silicon-on-Insulator Wafers*, Inv. No. 337-TA-966, Order No. 15 at 15, 2016 WL 6810796, *8 (May 9, 2016) ("As a first principle, in considering whether belated disclosures will be permitted, 'good cause' and a 'lack

of prejudice’ are key factors.” (citations omitted)). Here, there was good cause for Roku’s production of this evidence after the close of discovery because the events themselves occurred after the close of discovery. Appx9819-9821. Additionally, there was no undue prejudice to Respondents because they had the opportunity to depose Roku’s expert witnesses on this evidence and Respondents’ expert witnesses had the opportunity to address this evidence in their reports. *Id.* Respondents also could have taken further fact depositions regarding the new events.

The ALJ’s erroneous evidentiary ruling prejudiced Roku by excluding evidence regarding Gazelle development activity after the close of fact discovery, including evidence showing that:

- Roku completed final schematics for Gazelle, and released those schematics to the factory. *Id.* (¶ 5).
- Roku completed writing source code to implement the Feature Guide and uploaded that code to a remote for testing. *Id.* (¶8).

Much of this evidence directly contradicts the ALJ’s basis for finding that Roku did not satisfy the domestic industry requirement.²⁰

²⁰ Although Roku petitioned the Commission for review of the ALJ’s exclusion ruling, the Commission did not address this issue in view of its determination that post-complaint evidence could not be considered. Appx10337-10361; Appx20-21.

III. BECAUSE THE '511 PATENT EXPIRED DURING THIS APPEAL, THE COURT SHOULD VACATE THE COMMISSION'S FINDING THAT CLAIM 5 IS INVALID.

The '511 patent expired on June 21, 2023, while this appeal was pending. *See supra* p. 12. Because the Commission can only issue prospective relief, Roku's appeal as to the '511 patent is moot, and the portions of the Commission's final determination as to the '511 patent should be vacated. *See Tessera, Inc. v. ITC*, 646 F.3d 1357, 1371 (Fed. Cir. 2011); *Tex. Instruments Inc. v. ITC*, 851 F.2d 342, 344 (Fed. Cir. 1988). Moreover, under this Court's clear precedent, the existence of a pending district court case involving the same patent does not avoid mootness. *See INVT SPE LLC v. ITC*, 46 F.4th 1361, 1370 (Fed. Cir. 2022).

CONCLUSION

The Court should reverse the Commission's determination that claim 10 of the '875 patent is anticipated or obvious, vacate the Commission's determination that Roku did not satisfy the technical prong of the domestic industry requirement, vacate the Commission's determination that claim 5 of the '511 patent is invalid, and remand the case to the Commission for further proceedings consistent with the Court's opinion.

Respectfully submitted,

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Dated: October 11, 2023

ADDENDUM

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF**

Investigation No. 337-TA-1263

COMMISSION OPINION

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I. INTRODUCTION

On October 5, 2022, the Commission determined to review in part a final initial determination (“ID”) issued on June 28, 2022, by the presiding administrative law judge (“ALJ”) finding no violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to the asserted claims of U.S. Patent No. 7,388,511 (“the ’511 patent”) and U.S. Patent No. 8,378,875 (“the ’875 patent”). The Commission also determined to review in part Order Nos. 30 and 37, issued on January 14, 2022, and June 24, 2022, respectively. On review, the Commission has determined that there has been no violation of section 337 with respect to either patent.

In particular, the Commission has determined to affirm the ID’s finding of no violation with regard to the ’875 patent and to affirm the finding of invalidity in Order Nos. 30 and 37 with regard to claim 5 of the ’511 patent with certain modifications in the underlying findings and reasoning. The Commission has also determined on review to modify certain findings and statements in the ID pertaining to the ’875 patent that lack support in the record. *See* Part IV.C, *infra*. The Commission affirms and adopts the findings, conclusions, and supporting analysis of the ID and of Order Nos. 30 and 37 that are not inconsistent with this opinion.

II. BACKGROUND AND PROCEDURAL HISTORY

The Commission instituted this investigation on May 14, 2021, based on a complaint filed on behalf of Roku, Inc. (“Roku”) of San Jose, California. 86 Fed. Reg. 26542-43 (May 14, 2021). The complaint, as supplemented and amended, alleged violations of section 337 based upon the importation into the United States, the sale for importation, and the sale within the United States after importation of certain televisions, remote controls, and components thereof by reason of infringement of one or more of claims 1-5, 8-11, and 14 of the ’875 patent and

claim 5 of the '511 patent.¹ The amended complaint further alleged that an industry in the United States exists or is in the process of being established. The Commission's notice of investigation named the following entities as respondents: Universal Electronics, Inc.; Gemstar Technology (Qinzhou) Co. Ltd.; Gemstar Technology (Yangzhou) Co. Ltd.; C.G. Development Ltd.; Universal Electronics BV; UEI Brasil Controles Remotos Ltda.;² CG México Remote Controls, S. de R.L. de C.V.; LG Electronics Inc.; LG Electronics USA, Inc.; Samsung Electronics Co., Ltd.; Samsung Electronics America, Inc.; Charter Communications, Inc.; Charter Communications Operating, LLC; Spectrum Management Holding Company, LLC; Altice USA, Inc.; Cablevision Systems Corp.; Cequel Communications, LLC d/b/a Suddenlink Communications; and WideOpenWest, Inc. (collectively, "Respondents"). *Id.* at 26543; ID at 2-3. The Commission's Office of Unfair Import Investigations was not named as a party in this investigation.

A *Markman* hearing was held on August 19 and September 14, 2021. ID at 3. A first *Markman* order construing certain claim terms for the '511 patent and certain agreed-upon claim terms for the '875 patent issued on January 14, 2022. Order No. 30 (Jan. 14, 2022) (*Markman* Order I). In construing terms for the '511 patent, the ALJ found that the only asserted claim, claim 5, was invalid as indefinite. *Id.* at 13. A second *Markman* order construing additional claim terms for the '875 patent issued on January 21, 2022. Order No. 32 (Jan. 21, 2022)

¹ On November 19, 2021, an initial determination issued granting Roku's motion for partial termination of the investigation based upon withdrawal of claim 11 of the '875 patent. Order No. 19 (Nov. 19, 2021), *unreviewed by* Comm'n Notice (Dec. 14, 2021). Accordingly, pending in this investigation are claims 1-5, 8-10, and 14 of the '875 patent and claim 5 of the '511 patent. ID at 3.

² UEI Brasil Controles Remotos Ltda. was terminated from this investigation. Order No. 20 (Nov. 19, 2021), *unreviewed by* Comm'n Notice (Dec. 14, 2021).

(*Markman* Order II).

Based on the indefiniteness ruling in Order No. 30, Roku and the UEI,³ Samsung,⁴ and LG⁵ respondents (collectively, “the ’511 Respondents”) jointly moved for entry of summary determination of indefiniteness as to claim 5 of the ’511 patent. Motion No. 1263-028 (Jan. 18, 2022). The moving parties agreed that, as a result of Order No. 30, “all remaining issues relating to the ’511 Patent are moot (subject to any review of the ALJ’s indefiniteness finding by the Commission).” *Id.* at 2. The parties also “stipulated that . . . no party will present evidence at the hearing regarding the 511 Patent” and stated that “all parties stipulate that the portion of the 511 Respondents’ Motion for Summary Determination (Mot. No. 1263-015) relating to indefiniteness should be granted.” *Id.* at 2-3 (footnote omitted).⁶ On June 24, 2022, the ALJ issued Order No. 37, granting summary determination in part on the invalidity of claim 5 of the ’511 patent and granting reconsideration-in-part of Motion No. 1263-015.

On July 1, 2022, complainant Roku filed a petition for review of Order Nos. 30 and 37.⁷

³ The ID identified the “UEI” Respondents as: Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, and CG México Remote Controls, S. de R.L. de C.V. *See* ID at xii.

⁴ The ID identified the “Samsung” Respondents as: Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. *See id.*

⁵ The ID identified the “LG” Respondents as: LG Electronics Inc. and LG Electronics USA, Inc. *See id.*

⁶ The parties’ stipulation was premised upon *Markman* Order I finding claim 5 of the ’511 patent as indefinite. Roku preserved its right to challenge Order No. 30’s claim construction and the summary determination of indefiniteness in Order No. 37 by its petition for review of Order Nos. 30 and 37.

⁷ Complainant Roku’s Petition for Review of Order No. 37 Granting Summary Determination That Claim 5 Of The ’511 Patent Is Invalid Due to Indefiniteness (July 1, 2022) (“Roku Pet.”).

On July 11, 2022, the '511 Respondents filed a response to Roku's petition for review.⁸

On June 28, 2022, the ALJ issued the final ID finding no violation of section 337, and a recommended determination on remedy and bond. The ID incorporated the previous finding that claim 5 was invalid, but did not address any other issues related to the '511 patent. *See* ID at 23-24. The parties filed various petitions and contingent petitions for review of the ID, and responses thereto.⁹

The Commission determined to review Order Nos. 30 and 37 and to review the ID in part on October 5, 2022. 87 Fed. Reg. 61629-30 (Oct. 12, 2022). On review, the Commission affirms the finding of no violation as to both patents.

III. COMMISSION REVIEW OF THE ALJ'S FINDINGS

The Commission's review is conducted *de novo*. *Certain Soft-Edged Trampolines and Components Thereof*, Inv. No. 337- TA-908, Comm'n Op. at 4 (May 1, 2015) (citing *Certain Polyethylene Terephthalate Yarn and Products Containing Same*, Inv. No. 337-TA-457, USITC Pub. No. 3550, Comm'n Op. at 9 (June 18, 2002)). Upon review, the "Commission has 'all the powers which it would have in making the initial determination' except where the issues are limited on notice or by rule." *Certain Flash Memory Circuits & Prods. Containing Same*, Inv. No. 337-TA-382, USITC Pub. No. 3046, Comm'n Op. at 9-10 (July 1997) (quoting *Certain Acid-Washed Denim Garments & Accessories*, Inv. No. 337-TA-324, Comm'n Op. at 5 (Nov. 1992)). With respect to the issues under review, "the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the

⁸ The '511 Respondents' Response to Roku's Petition for Review of Order No. 37 Granting Summary Determination That Claim 5 Of The '511 Patent Is Invalid Due to Indefiniteness (July 11, 2022) ("Resp. to Pet.").

⁹ *See* the accompanying Notice for a complete list of pleadings.

administrative law judge.” 19 C.F.R. § 210.45(c). The Commission also “may take no position on specific issues or portions of the initial determination,” and “may make any findings or conclusions that in its judgment are proper based on the record in the proceeding.” *Id.*; *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984).

IV. DISCUSSION

A. The ’511 Patent

1. The ALJ’s Findings As to Indefiniteness of Claim 5 of the ’511 Patent

The sole issue before the Commission as to the ’511 patent is whether the ALJ correctly found that asserted claim 5 is invalid as indefinite. In Order No. 30, the ALJ found that claim 5 of the ’511 patent was invalid as indefinite for two reasons. First, the ALJ found that claim 5 was indefinite due to lack of antecedent basis for “the step of transmitting the user specified command” in the second “wherein” clause. *See* Order No. 30 at 10-12. Second, the ALJ found that claim 5 was indefinite because it was not reasonably certain “what the claim is meant to cover in a scenario where the remote control device and coding device are disconnected.” Order No. 30 at 12. Order No. 37 granted summary determination that claim 5 of the ’511 patent is invalid for indefiniteness and the final ID repeated that finding. Order No. 37 at 6; ID at 23-24. Accordingly, the ID found no violation of section 337 with respect to the ’511 patent. ID at 23-24, 165.

2. The Parties’ Arguments

Roku contends that the ALJ’s indefiniteness finding is erroneous on both grounds. First, Roku submits that “a claim is definite regardless of formal compliance with antecedent basis rules, as long as its meaning is reasonably certain when ‘decided in context.’” Roku Pet. at 2, 12-13 (citing *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir.

2006)). Second, Roku argues that the ALJ’s claim construction analysis failed to address Federal Circuit precedent regarding conditional or contingent claim limitations. *Id.* Roku argues that the Commission should therefore reverse the ALJ’s invalidity determination, adopt Roku’s construction of claim 5, and remand the investigation to the ALJ for further proceedings. *Id.* at 15. Respondents oppose review, supporting the ALJ’s reasoning and conclusions. Resp. to Pet. at 20.

3. Analysis

Section 112 of Title 35, paragraph 2 provides that the “specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”¹⁰ Known as the “definiteness” requirement, in *Nautilus*, the United States Supreme Court interpreted the requirement as follows:

[W]e read § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable.

Nautilus, Inc. v. Biosig Instruments, Inc., 134 S.Ct. 2120, 2129 (2014). Whether a claim satisfies this requirement is a question of law. *S3, Inc. v. nVIDIA Corp.*, 259 F.3d 1364, 1367 (Fed. Cir. 2001). A party seeking to invalidate a patent claim must do so by clear and convincing evidence. *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008).

The sole claim at issue, claim 5, recites:

¹⁰ 35 U.S.C. § 112, ¶ 2 (2006 ed.). See 35 U.S.C.A. § 112. Specification. Effective: September 16, 2012. Pre-AIA law applies because the ’511 patent was filed prior to September 16, 2012. See Editorial and Statutory Notes to 35 U.S.C. § 112 (indicating that the effective date for amendment of 35 U.S.C. § 112 by Pub. L. 112-29 is September 16, 2012).

5. A method for remote control of at least two like controllable devices, the method comprising:

- a) with a remote control device,
inputting a user-specified command for controlling the controllable devices; and
transmitting the user-specified command;
- b) with a coding device,
receiving the user-specified command from the remote control device;
adding to the user-specified command a device identifier for identification of at least one of the controllable devices;
transmitting the device identifier and the user-specified command in combination;
- c) with one of the like controllable devices,
receiving the device identifier and the user-specified command in combination;
extracting the device identifier;
comparing said extracted device identifier with a further device identifier for identification of the controllable device;
refraining from further operation with the received user-specified command if said identifiers do not match; and
supplying the user-specified command if said identifiers do match;

wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, and

wherein **the step of transmitting the user specified command** further includes:

- transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and
- transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected.

'511 patent, claim 5 (emphasis added).

The ALJ found that “the step of transmitting the user specified command” in the second wherein clause does not have proper antecedent basis and therefore is indefinite. *See* ID at 23-24

(citing Order No. 30 at 9-13). The ALJ indicated that there are “theoretically two options for antecedent basis for that phrase: (i) ‘transmitting the user-specified command’ in step a), or (ii) ‘transmitting the device identifier and the user-specified command in combination’ in step b).” Order No. 30 at 10-11. The ALJ further noted that “[w]hile the phrase in step a) recites the same exact language as the ‘wherein’ clause and would be a clear choice for antecedent basis, Roku instead argues that ‘the step of transmitting the user specified command’ refers to either step a) or step b), depending on whether the remote control device and coding device are connected or disconnected.” *Id.* at 11 (citation omitted). The ALJ observed that Complainant did not present any authority establishing that antecedent basis can be conditional. *See id.*

The Commission agrees with Roku that the claim is reasonably clear as to what “the step of transmitting the user specified command” refers to. As the ALJ recognized, there is some ambiguity in the “wherein” clause, but we find that the language of the second wherein clause of claim 5 provides an adequate basis for a person of ordinary skill in the art to understand the “scope of the invention with reasonable certainty” as expressed in this step. *Nautilus*, 134 S.Ct. at 2129. The clause begins with the phrase “wherein the step of transmitting the user-specified command,” which precisely tracks the language of step (a), but the claim refers to two occasions of transmitting the user-specified command; in step (a), where the user-specified command is transmitted on its own, and in step (b), where the user-specified command is transmitted with a device identifier. *See* Order No. 30 at 11-12. Further, the two options that comprise the “wherein” clause closely track steps (a) and (b) as they relate to transmitting the user-specified command: “transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected” (step (a)); or “transmitting the user-specified command and the device identifier from the coding device to the controllable

devices when the remote control device and the coding device are connected” (step (b)). ’511 patent, claim 5. Admittedly, the first option does not precisely track step (a), which makes no reference to transmitting the user-specified command *to the controllable devices*. Nonetheless, in the Commission’s view, it is reasonably clear from the body of the wherein clause which step is being referred to when taking the actions, and therefore the claim is not indefinite for this reason.

The Commission nevertheless agrees with the ALJ that there is an underlying defect in claim 5 that is unrelated to the alleged antecedent basis problem, namely that “a person of ordinary skill in the art would not be able to ascertain with reasonable certainty, what the claim is meant to cover in a scenario where the remote control device and coding device are disconnected.” Order No. 30 at 12; *see also id.* at 13. When the remote control device and coding device are disconnected, the wherein clause of claim 5 requires “transmitting the user-specified command from the remote control device to controllable devices.” ’511 patent, claim 5. The only guidance as to what the controllable devices do with the user-specified command comes in step (c). Step (c) provides that the controllable devices “receiv[e] the device identifier and user-specified command in combination,” “extract[] the device identifier,” “compar[e]” the extracted device identifier with a further device identifier; and either “refrain[] from further operation” if the identifiers do not match, or “supply[] the user-specified command” if the identifiers match. *Id.* The “device identifier,” however, is only sent from the “coding device” of step (b). If the remote control device and coding device are disconnected, the coding device never adds the device identifier, and there is no identifier for the controllable device to “receive,” “extract,” or “compare,” and no trigger for the refraining or supplying steps. Ultimately, there is

no indication in the claim as to what, if anything, the controllable devices do with the user-specified command transmitted by the remote control device in the absence of a device identifier.

Roku acknowledges that step (c) “is a required portion of the claim.” Roku *Markman* Br. at 29; Order No. 30 at 8-9. And Roku admits that “claim 5 cannot be performed in the ‘disconnected’ state.” Roku *Markman* Br. at 35. Nonetheless, Roku contends that the disconnected state does not render the claim indefinite, but rather is merely allowable “surplusage.” *Id.* at 35-36 (“The logical consequence of this is that claim 5 cannot be performed in the ‘disconnected’ state and therefore ‘transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected’ is effectively rendered surplusage.”) (citation omitted). More specifically, Roku argues that because the claim “can be satisfied when operating while the coding device is ‘connected,’ any method steps required to be performed only in the ‘disconnected’ state would be permissible surplusage.” Roku Pet. at 6 (citation omitted).

The cases on which Roku relies do not support its contention that the disconnected state is mere “surplusage.” Initially, Roku cites *Hytera* for the proposition that the method of claim 5 need only be performed with “a system *capable* of performing this conditional limitation when in the ‘disconnected’ state.” Roku Pet. at 14 (emphasis in original) (citing *Hytera Commc'ns Co. Ltd. v. Motorola Solutions, Inc.*, 841 F. App’x 210 (Fed. Cir. 2021)). According to Roku: “method steps (a)-(c) and the ‘connected’ conditional portion of the wherein clause can be performed in the ‘connected’ state on a system which is also *capable*—at a different time—of ‘transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected.’” *Id.* As a threshold matter, the Federal Circuit in *Hytera* held that in order to render a claim obvious, “the prior art must teach each step of the

claim, including the response to each condition” in a conditionally phrased limitation. *Hytera*, 841 F. App’x. at 216. To the extent this holding is relevant to the present case, it supports the ALJ’s finding that all conditions of the claim are meaningful, and that the patent owner is not allowed to pick and choose which conditions in the claim can later be declared “surplusage.”

Further, the text of claim 5 does not support Roku’s argument. Nothing in steps (a)-(c) of claim 5 indicate these steps are in any way conditional, for example, with prefatory language such as “if.” *Cf. Hytera*, 841 F. App’x at 215 (“if the timeslot is the current desired timeslot . . . ; otherwise selecting a synchronization pattern . . .”).

Roku also relies on *Cybersettle* for a similar contention as with *Hytera*, arguing that “[i]f the condition for performing a contingent step is not satisfied, the performance recited by the step need not be carried out in order for the claimed method to be performed,” and because “claim 5 can be satisfied when operating while the coding device is ‘connected,’ any method steps required to be performed only in the ‘disconnected’ state would be permissible surplusage.” Roku Pet. at 6 (citing *Cybersettle, Inc. v. Nat’l Arb. Forum, Inc.*, 243 F. App’x 603 (Fed. Cir. 2007)). Again, this argument presumes steps (a)-(c) are in fact conditional. Roku’s only suggestion as to why the steps are conditional is that the steps must be read in that manner to avoid the claim being nonsensical. We reject Roku’s invitation to rewrite the claim. “Although [the courts] construe claims, if possible, so as to sustain their validity, it is well settled that no matter how great the temptations of fairness or policy making,” the courts and the Commission “do not redraft claims.” *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1584 (Fed. Cir. 1995); *see also Group One, Ltd. v. Hallmark Cards, Inc.*, 407 F.3d 1297, 1302 (Fed. Cir. 2005) (“We affirm the district court’s judgment regarding the invalidity of the claims of the uncorrected ’492

patent on grounds of indefiniteness because necessary language was omitted from the claims.”). Thus, Roku’s position lacks legal support.

As instructed by the Supreme Court, the Commission also looks to the specification and prosecution history of the ’511 patent in reaching its final conclusion on indefiniteness.

Nautilus, 134 S.Ct. at 2129. The specification focuses primarily on a remote control system (and a method of using said system) that includes employing a device identifier to determine whether a user-specified command entered with a remote control should be supplied to a particular controllable device. ’511 patent, col. 1, l. 52-col. 2, l. 3. The specification discusses various coding and decoding means and various configurations, but the configurations are largely directed to using a device identifier in this manner. *Id.* at col. 2, ll. 10-31. There is no discussion of the “disconnected” state in the specification, nor is there any discussion of a system or method having a remote control device and a coding device that “are separate devices which are selectively interconnectable and disconnectable” as required by claim 5. Rather, these limitations were added to the claims during prosecution.

Specifically, after several rounds of attempting to obtain allowance of claims directed to the main embodiment disclosed in the specification, the patentee added dependent claims directed to a remote control and a coding device that are interconnectable and disconnectable and which have different functions depending on the specific state. The sole independent method claim, claim 9, originally recited:

9. A method of remote control of at least two controllable devices, the method comprising the step of communicating a user-specified command to the controllable devices, characterized in that the method comprises the further steps of:

- adding to the user-specified command a device identifier for identification of at least one of the controllable devices;
- transmitting the device identifier and the user-specified command;
- receiving the device identifier and the user-specified command;
- extracting the device identifier; comparing said extracted device identifier with a further device identifier for identification of the controllable device; refraining from further operation with the received user-specified command if said identifiers do not match;
- supplying the user-specified command to the controllable device.

JXM.0004.0014-5. This claim focuses, as does the specification, on employing a device identifier to determine whether a user-specified command entered with a remote control should be supplied to a particular controllable device. On March 15, 2006, claim 9 was rejected as anticipated by Brinkmeyer (U.S. Patent No. 5,940,007). JXM-0004.0090. In response, claim 9 was amended to require at least two “identical” controllable devices, and the patentee argued that this limitation distinguishes claim 9 from the prior art. JXM-0004.0104-7. Claim 9 was rejected as obvious over Brinkmeyer in view of Adolph (U.S. Patent No. 5,959,539), because Adolph provided the limitation of two identical controllable devices. JXM-0004.0118-20. On September 13, 2006, the patentee amended claim 9 as follows and the amendment was entered on November 6, 2006, when the patentee filed a Request for Continued Examination:

9. (currently amended) A method of remote control of at least two identical like controllable devices, the method comprising ~~the step of communicating a user-specified command to the identical controllable devices,~~ characterized in that the method comprises the further steps of:

- entering a user-specified command on a key pad of a remote, the user specified command being common to the at least two controllable devices;
- sending the entered user-specified command to an encoding device;
- with the encoding device, adding to the user-specified command a device identifier for identification of at least one of the identical at least two controllable devices;

- with one of the remote and the encoding device, transmitting the device identifier and the user-specified command;

- with the controllable devices or decoder devices associated with the controllable devices, receiving the device identifier and the user-specified command;

- with the decoder devices, extracting the device identifier[[:]] and comparing said extracted device identifier with [[a]] further device identifiers for identification of the identical controllable device; refraining from further operation with the received user-specified command if said identifiers do not match;

- supplying the user-specified command to the identical controllable devices associated with decoding devices in which the identifiers match.

JXM-0004.0131-2. Claim 9 was rejected as obvious over Lin (U.S. Patent No. 5,854,594) in view of Adolph. JXM-0004.0162. Subsequently, claim 9 was amended to recite a plurality of controllable devices that respond to common commands and a user-selected device identifier.

JXM-0004.0177-8. The patentee also added, for the first time, dependent claim 16, directed to remote control and coding devices that are selectively interconnectable and disconnectable and which function differently depending on which state they are in:

16. (New) The system according to claim 13, wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, the remote control device functioning to transmit the user-specified command to controllable devices when the coding device is disconnected and the coding device functioning to transmit the user-specified command when the remote control device and the coding device are connected.

JXM-0004.0180.

In response, on July 12, 2007, the examiner indicated that the subject matter of claim 16 is not disclosed in the prior art and covers allowable subject matter. JXM-0004.0205. The patentee again amended claim 9 to incorporate the concept of selective connectability:

9. (currently amended) A method for remotely controlling a plurality of like controllable devices which respond to common commands, the method comprising :

- interconnecting a selectively interconnectable and disconnectable encoding device with a remote;
- interconnecting a selectively interconnectable and disconnectable decoding device with one of the controllable devices;
- entering a common user selected device identifier into the remote and the decoding device;
- entering a user-specified one of the common commands on a key pad of ~~[[a]] the~~ remote, the user-specified common command being configured to control each of the plurality of controllable devices;
- sending the entered user-specified command to ~~[[an]] the~~ encoding device;
- with the encoding device, adding to the user-specified command ~~[[a]] the~~ user-selected device identifier ~~for identification of at least one of the plurality of controllable devices;~~
- with one of the remote and the encoding device, transmitting the device identifier and the user-specified command;
- with the controllable devices or the interconnected decoder device~~[[s]]~~ associated interconnected with one of the controllable devices, receiving the device identifier and the user-specified command;
- with the decoder device~~[[s]]~~, extracting the device identifier and comparing said extracted device identifier with ~~[[a]] the common~~ user-selected device identifier entered into the decoder device;
- supplying the user-specified command to the controllable devices associated with decoding devices in which the identifiers match.

JXM-0004.0216-7.

Claim 9, however, was again rejected as obvious in light of Lin, Tsui (U.S. Patent No. 6,005,508), and Memmel (U.S. Patent No. 4,884,055). JXM-0004.0236. At that point, the patentee cancelled claim 9 and introduced claim 19, which ultimately issued as claim 5, with the

disputed wherein clause. JXM-0004.0249-52. On February 12, 2008, the examiner allowed claim 19, as well as several other claims. JXM-0004.0260.

This prosecution history demonstrates that the wherein clause, which explains what steps are to be taken in each of the connected and disconnected states, was necessary to secure allowance of claim 5. Roku cannot now argue that one of those states (the disconnected state) is “surplusage” that the Commission can ignore. *See, e.g., Cybersettle*, 243 F. App’x at 608 (limitation added to overcome prior art was a required step of the method). Thus, considering the text of claim 5, the specification, and the prosecution history of the ’511 patent, the Commission finds that a person of ordinary skill in the art would not be able to determine with reasonable certainty the scope of claim 5 in the “disconnected” state, and claim 5 is therefore invalid as indefinite.

B. The ’875 Patent

1. The ALJ’s Findings

The ID found that (1) the Representative Accused Products infringe claims 1-5, 8, and 10 of the ’875 patent; (2) Representative Accused Products Altice/Charter Pulse RF Remote (URC 2068) and WOW Experience Remote (URC 2135) infringe claim 9 of the ’875 patent; (3) the ’875 Respondents did not induce infringement of the asserted claims of the ’875 patent; (4) the asserted claims of the ’875 patent are invalid; (5) Roku failed to satisfy the technical prong of the domestic industry requirement for the ’875 patent; and (6) Roku failed to satisfy the economic prong of the domestic industry requirement. ID at iv, 165. Accordingly, the ID found no violation of section 337 with respect to the ’875 patent. *Id.* at iii.

As noted above, the Commission determined to review in part, and on review, affirm certain of the ID’s findings, including the finding of no violation of section 337, as to the ’875 patent.

2. The Parties’ Arguments

Roku contends that the ID erred in finding that Roku’s domestic industry product does not satisfy the technical prong of the domestic industry requirement. Roku Pet. of ID on Violation¹¹ at 22. Roku argues that it is in the process of establishing a domestic industry with respect to the ’875 patent by developing the Gazelle remote control that will incorporate the functionality described in the Unified TV IR Code Configuration (“Feature Guide”) (JX-0043C) that practices the ’875 patent (the “Gazelle Remote”). *Id.* Roku contends that the Gazelle Remote has been designed to implement the Feature Guide and thereby will practice every limitation of claims 1-4, 8, 10, and 14 of the ’875 patent. *Id.* (citing Tr. (Balakrishnan) 260:17-20). Roku argues that the ID’s conclusion was based on an erroneous requirement that Roku have a practicing product by the close of fact discovery which was, Roku alleges, legal error. *Id.* Roku also argues that the ID erred by reading the statutory language to require completion of all necessary steps in the development of the domestic industry product prior to the close of fact discovery. *Id.* Finally, Roku argues that “under a proper application of the test for the technical prong, Roku provided substantial evidence that (a) it is taking the necessary tangible steps towards developing the Gazelle Remote; and (b) there is a significant likelihood that the Gazelle Remote will exist in the future and will practice at least one claim of the ’875

¹¹ Complainant Roku’s Petition for Review of Initial Determination on Violation of Section 337 (July 11, 2022) (“Roku Pet. of ID on Violation”).

patent.” *Id.*; *see also id.* at 23-41. Respondents oppose review. Resp. to Roku Pet. of ID on Violation¹² at 18-29.

3. Analysis

The Commission has determined to affirm the ID’s finding that Roku failed to prove that it satisfies the technical prong of the domestic industry requirement, based on the modified analysis below. The Commission has also determined to take no position with respect to the ID’s finding that Roku failed to satisfy the economic prong of the domestic industry requirement. *See Beloit Corp.*, 742 F.2d at 1423.

The domestic industry requirement is set forth by statute. A violation of section 337 shall be found to exist “only if an industry in the United States, relating to the articles protected by the patent . . . exists or is in the process of being established.” 19 U.S.C. § 1337(a)(2). The Commission examines whether the asserted domestic industry products practice the asserted patent (“technical prong”) and whether, with respect to the domestic industry articles protected by the patent, the specified investments in subsection 337(a)(3)(A)-(C) are significant or substantial (“economic prong”). *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, USITC Pub. No. 4120 (Dec. 2009) (“*Stringed Musical Instruments*”), Comm’n Op. at 13 (May 16, 2008) (citing S. REP. 100-71 at 130, and H. REP. 100-40 at 157). An industry is “in the process of being established” if the complainant can “demonstrate that [it] is taking the necessary tangible steps to establish such an industry in the United States” and that there is a “significant likelihood that the industry requirement will be satisfied in the future.” *Id.* (citations omitted).

¹² Respondents’ Response to Roku’s Petition for Review (July 19, 2022) (“Resp. to Roku Pet. of ID on Violation”).

a. The Domestic Industry Is to Be Assessed at the Time of the Complaint

The relevant date at which to determine whether the domestic industry exists or is in the process of being established is the filing date of the complaint. *See Motiva, LLC v. Int’l Trade Comm’n*, 716 F.3d 596, 601 n.6 (Fed. Cir. 2013) (affirming the Commission’s use of the complaint filing date to determine whether complainant proved that an industry exists or is in the process of being established); *Certain Video Game Systems and Controllers*, Inv. No. 337-TA-743, Comm’n Op. at 5 (Jan. 20, 2012), *aff’d sub nom. Motiva*, 716 F.3d 596 (“[A]s a general matter, the only activities that are relevant to the determination of whether a domestic industry exists or is in the process of being established are those that occurred before the complaint was filed.”). The Commission has explained that it “will consider post-complaint evidence regarding domestic industry only in very specific circumstances, *i.e.*, ‘when a significant and unusual development has occurred after the complaint has been filed.’” *Certain Collapsible Sockets for Mobile Electronic Devices and Components Thereof*, Inv. No. 337-TA-1056, Comm’n Op. at 15 n.10 (July 9, 2018) (quoting *Certain Television Sets, Television Receivers, Television Tuners, and Components Thereof*, Inv. No. 337-TA-910, Comm’n Op. at 72 (Oct. 30, 2015) (declining to consider post-complaint evidence to determine whether an industry exists)); *Thermoplastic Encapsulated Electric Motors, Components Thereof, and Products and Vehicles Containing Same II*, Inv. No. 337-TA-1073, Comm’n Op. at 13 (Aug. 12, 2019) (finding that the date for determining domestic industry in the process of being established is the complaint filing date, and that complainant’s reliance on post-complaint evidence of prototype manufacturing did not show an industry in the process of being established as of the complaint filing date)).

Here, the ID considered Roku’s contentions regarding whether it satisfied the technical prong of the domestic industry requirement at the time of the complaint and found that it did not.

See ID at 87-92. Roku made no argument, nor did it offer any evidence at the hearing, that there was “a significant and unusual development after the complaint has been filed” so as to justify the ALJ’s consideration of post-complaint evidence to support its domestic industry claim. Thus, to the extent the ID considered evidence as of the close of discovery, rather than as of the complaint filing date, the ID erred. ID at 87-88.

b. Roku Failed to Show That a Domestic Industry Exists Under the Technical Prong

Both Federal Circuit law and Commission precedent require the existence of actual “articles protected by the patent” in order to establish that a domestic industry exists at the time the complaint is filed. In *Microsoft Corp. v. International Trade Commission*, the Federal Circuit held:

Section 337, though not requiring that an article protected by the patent be produced in the United States, unmistakably requires that the domestic company’s substantial investments relate to actual “articles protected by the patent.” 19 U.S.C. § 1337(a)(2), (3). A company seeking section 337 protection must therefore provide evidence that its substantial domestic investment—*e.g.*, in research and development—relates to an *actual article that practices the patent*, regardless of whether or not that article is manufactured domestically or abroad. *InterDigital Commc’ns v. Int’l Trade Comm’n*, 707 F.3d 1295, 1299, 1304 (Fed. Cir. 2013).

731 F.3d 1354, 1361-62 (Fed. Cir. 2013) (“*Microsoft*”) (emphasis added). In view of both *Microsoft* and *InterDigital* (cited by *Microsoft* above), the Commission has held that “a complainant alleging the existence of a domestic industry under 19 U.S.C. § 1337(a)(3)(C) must show the existence of articles.” *Certain Computers and Computer Peripheral Devices, and Components Thereof, and Products Containing Same* (“*Certain Computers and Computer Peripheral Devices*”), Inv. No. 337-TA-841, Comm’n Op. at 40 (Jan. 9, 2014). The existence of actual articles protected by the asserted patent applies equally to, *inter alia*, subsection 337(a)(3)(B), the provision upon which Roku relies. 19 U.S.C. § 1337(a)(2), (3); *see Microsoft*,

731 F.3d at 1361-62 (“Section 337, though not requiring that an article protected by the patent be produced in the United States, unmistakably requires that the domestic company’s substantial investments relate to actual ‘articles protected by the patent.’”) (citing 19 U.S.C. § 1337(a)(2), (3)). Thus, to demonstrate that a domestic industry exists, the “existence of articles” requires a physical embodiment of the patented invention, although this requirement is not “limited to commercial goods.” *Certain Non-Volatile Memory Devices and Products Containing the Same*, Inv. No. 337-TA-1046, Comm’n Op. 41 (Oct. 26, 2018) (“*Memory Devices*”).

In the present investigation, the ID found that “[n]o Roku product exists that practices the ’875 patent.” ID at 83 (subsection VI.D.2.a. heading). The record supports this finding. *See id.* at 83-88.¹³ Therefore, we agree with the ID that Roku has not shown the existence of an article protected by the patent at the time of the filing of the complaint. *See id.* Without a physical embodiment of the patented invention, the Commission finds that Roku cannot establish that a domestic industry “exists” relating to the articles protected by the patent.

c. Roku Failed to Demonstrate That a Domestic Industry Was in the Process of Being Established Under the Technical Prong

Roku also argued that it was in the process of establishing a domestic industry as to the ’875 patent. *See, e.g.*, Roku’s Initial Post-Hearing Brief at 52; Roku Pet. of ID on Violation at 1. The ID found that as of the date of the filing of its complaint Roku had not taken the necessary

¹³ *See, e.g.*, ID at 83 (“[i]t is undisputed that Roku has not made an operational prototype of the Gazelle remote and there is no date certain for release”) (citing Tr. (Jeffrey Peters) at 108:3-22, 109:12-14, 109:22-25, 109:16-24.) (footnote omitted); *see also id.* at 83-84 [REDACTED]

[REDACTED]

tangible steps to establish the requisite industry in the U.S. and had not shown a significant likelihood that such an industry will be established with respect to the development of a protected article in the future. ID at 93, 95. The record supports the ID’s finding. *See id.* at 83-89, 93-96.¹⁴

As discussed further below, Roku failed to produce, and the record lacks, sufficient evidence of how Roku’s alleged domestic industry device (Gazelle) will operate so as to allow the parties to probe in discovery, and the Commission to make a determination, as to whether Gazelle will practice the ’875 patent. As a result, and as the ID found, “the 875 Respondents have not had an opportunity to assess whether Gazelle will ever actually meet each and every claim limitation of one or more claims of the ’875 patent.” ID at 87. The ID further found that “[t]his is not about significant likelihood, but rather, substantial proof with respect to the technical prong. The ’875 Respondents have had no opportunity to evaluate in fact or expert discovery whether Roku’s future promised product actually would practice the claims of the ’875 patent.” *Id.* at 90. Roku does not rebut these findings. *See Roku Pet. of ID on Violation* at 22-46. We agree with the ID that complainant must provide sufficient information to allow an assessment of whether the technical prong is met with respect to a domestic industry in the process of being established.

Evidence of a complainant’s progress towards an article that will practice one or more claims of the asserted patent as of the complaint filing date is relevant to whether the complainant has taken the necessary tangible steps to establish an industry, and whether there is

¹⁴ *See, e.g.,* ID at 93 (“It is Roku’s burden to show that it has taken “the necessary tangible steps to establish such an industry” and there is a “significant likelihood that the industry requirement will be satisfied in the future.” Roku has failed to meet its burden.”) (citing Tr. (Herrington) at 789:20-790:3, 791:17-792:3, 797:15-25, 809:13-16).

a significant likelihood that the domestic industry requirement will be satisfied in the future. The Commission, however, does not adopt the ID's finding that a currently existing physical article must exist at the time of the complaint filing to show a domestic industry in the process of being established. *See* ID at 89-92.¹⁵

The Commission finds that Roku failed to meet its burden to show that, at the time the complaint was filed, Roku was taking the necessary tangible steps towards practicing the '875 patent, and that there was a significant likelihood that the Gazelle Remote (or any other physical article) would practice one or more claims of the '875 patent in the future. Because Roku's evidence in this investigation is not sufficient to support such a showing, Complainant could not show that it met the technical prong of a domestic industry in the process of being established.

While in its Complaint, Roku "alleged it would release the Gazelle remote 



¹⁵ We note that, in *Certain Memory Devices*, the Commission rejected the argument that section 337(a)(2) requires a complainant to prove commercial production to establish an industry "in the process of being established." *Certain Memory Devices*, Comm'n Op. at 41-44. The Commission stated that the term "article" in section 337(a)(2) "is sufficiently capacious to embrace pre-commercial or non-commercial items." *Id.* at 42. Because *Certain Memory Devices* involved evidence of articles that had been manufactured for research and development, the question how the protected "articles" in section 337(a)(2) may be satisfied for purposes of a domestic industry in the process of being established was not an issue. Likewise, although an ALJ opined on the issue in *Certain Multiple-Beam Equalization Systems for Chest Radiography and Components Thereof*, Inv. No. 337-TA-326, Order No. 26, 1991 WL 788679, at *3 (Aug. 20, 1991), that order does not constitute the determination of the Commission because the investigation settled prior to a final Commission determination. Notice, 56 Fed. Reg. 58,587 (Nov. 20, 1991); *see also Certain Thermoplastic-Encapsulated Electric Motors, Components Thereof, and Products and Vehicles Containing Same II*, Inv. No. 337-TA-1073, Comm'n Op. at 12-15 (Aug. 12, 2019).

[REDACTED]

[REDACTED] Indeed, based on Roku's witness testimony, the ID found that "Roku has no definitive timeline by which it will create a device that will purportedly implement the unified TV IR code feature and allegedly practice the '875 patent." *Id.* at 85.

To be clear, this is not to say that a schematic or source code is necessary or would be sufficient to show a domestic industry in the process of being established for technical prong purposes. What is required will depend on a number of factors, including the type of article and the patent claims at issue. In this case, the Commission declines to rely on Roku's mere assertion that the Gazelle Remote will practice the patent, particularly given that the Respondents "had no opportunity to evaluate in fact or expert discovery whether Roku's future promised product actually would practice the claims of the '875 patent." ID at 90; *see id.* at 87 ("Respondents have not had an opportunity to assess whether Gazelle will ever actually meet each and every claim limitation of one or more claims of the '875 patent.").

For these reasons, the Commission affirms the ID's conclusion that Complainant failed to show that it was taking the necessary tangible steps to practice the asserted patent and that there was a significant likelihood the domestic industry requirement would be satisfied in the future, and thus, Complainant failed to show, as of the filing date of the complaint, a domestic industry in the process of being established.

d. The ALJ's Economic Prong Findings

Given that Roku has failed to satisfy the technical prong of the domestic industry requirement for an existing industry or one that is in the process of being established, the

Commission takes no position on the ID's discussion and findings regarding the economic prong. *See Beloit Corp.*, 742 F.2d at 1423. Accordingly, for the reasons set forth in the ID, subject to the modifications indicated *supra*, Roku has not satisfied the domestic industry requirement of section 337, 19 U.S.C. § 1337(a)(2), (3).

C. Modifications to Other Findings as to the '875 Patent

With respect to the '875 patent, the Commission has also determined to modify the subject ID as follows: (1) on pages iii-iv, beginning from the sixth line from the bottom of page iii through the fourth line on page iv, to modify the ID's statements to read as follows: "It is a finding of this ID that Claims 1-5, 8, and 10 of U.S. Patent No. 8,378,875 ("the '875 patent") are satisfied by the Representative Accused Products. It is also a finding of this ID that Claim 9 is satisfied by Representative Accused Products Altice/Charter Pulse RF Remote (URC 2068) and WOW Experience Remote (URC 2135).";¹⁶ (2) on page 1, to substitute the word "satisfied" for the word "infringed" in lines 1 and 2 of column 4 of Table 1; (3) on page 72, to modify the first full sentence to read as follows: "Accordingly, the URC 2135 infringes claims 1-4, 8, and 10 for the same reasons as the URC 1160."; (4) on page 73, to modify the ID's statement on the last two lines of the page to read "a) Roku Failed to Prove that Respondents UEI, Charter, and Altice, or End Users Directly Infringed the Asserted Method Claims; Roku Proved that Respondent WOW Directly Infringed the Asserted Method Claims"; (5) on page 78, to add the statement "Accordingly, Roku showed that WOW has directly infringed the asserted method

¹⁶ Representative Accused Products are defined as UEI OFA Streamer Remote (URC 7935); Charter Spectrum RF4CE Remote (URC 1160); Altice/Charter Pulse RF Remote (URC 2068); and WOW Experience Remote (URC 2135). *See* ID at xv. Furthermore, the ID provides that "UEI manufactures, sells to WOW, and imports into the United States a universal remote called the WOW Experience Remote, which is also known as the URC 2135." ID at 34.

claims” on line 4 from the bottom of the page; and (6) on page 121, on the seventh line from the top, to strike the words “or renders obvious.”

V. CONCLUSION

For foregoing reasons, the Commission affirms the ID’s finding that claim 5 of the ’511 patent is invalid as indefinite. Accordingly, the Commission affirms the ID’s finding that there is no violation of section 337 with respect to the ’511 patent in this investigation.

The Commission likewise affirms, based on the modified reasoning detailed *supra*, the ID’s conclusion that Roku has failed to demonstrate that it satisfied the technical prong of the domestic industry requirement as to the ’875 patent. Accordingly, the Commission affirms the finding that there is no violation of section 337 with respect to the ’875 patent in this investigation.

By order of the Commission.

A handwritten signature in black ink, appearing to read "Katherine M. Hiner".

Katherine M. Hiner
Acting Secretary to the Commission

Issued: October 28, 2022

**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 1

CONFIDENTIAL CERTIFICATE OF SERVICE

I, Katherine M. Hiner, hereby certify that the attached **COMMISSION OPINION** has been served upon the following parties as indicated, on **October 28, 2022**.



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**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 2

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

**CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1263

**ORDER NO. 37: INITIAL DETERMINATION GRANTING SUMMARY
DETERMINATION IN-PART ON THE INVALIDITY OF
U.S. PATENT NO. 7,388,511 AND GRANTING JOINT
MOTION FOR RECONSIDERATION OF MOTION
DOCKET NO. 1263-015 [MOTION DOCKET NO. 1263-015
AND MOTION DOCKET NO. 1263-028]**

(June 24, 2022)

I. INTRODUCTION

On November 22, 2021, certain respondents, that is Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, CG México Remote Controls S de R.L. de C.V., LG Electronics Inc., LG Electronics U.S.A., Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “the ’511 Respondents”) filed a motion for summary determination (“MSD”) on the invalidity of claim 5, and thus of U.S. Patent No. 7,388,511 (“the ’511 Patent”). (Mot. No. 1263-015). Claim 5 of the ’511 patent is the sole asserted claim of the ’511 patent in this Investigation.

The ’511 patent is one of two (2) asserted patents in this Investigation. The remaining asserted patent, U.S. Patent No. 8,378,875 (“the ’875 patent”), is the subject of an initial determination on violation (“ID”), which will issue soon.

On December 13, 2021, Complainant Roku, Inc. ("Roku" and with the '511 Respondents, "the Parties"), filed its opposition to the '511 Respondents' MSD.¹ (Doc. ID No. 758371; Opp'n at 1.).

On December 27, 2021, Roku and the '511 Respondents filed a stipulation ("Infringement Stipulation") that the question of whether any of the '511 patent Respondents have directly infringed claim 5 of the '511 patent would no longer be pursued in this Investigation, and that Roku would not pursue any claim in this Investigation against any of the '511 Respondents that they are direct infringers of claim 5 of the '511 patent pursuant to 35 U.S.C. § 271(a).² (Doc. ID No. 759284; Infringement Stipulation at 2 ¶ 4.).

On January 14, 2022, Order No. 30 issued which is titled Construing Certain Claims of U.S. Patent No. 7,388,511 (*Markman* Constructions)(Jan. 14, 2022).). Order No. 30 found claim 5 of the '511 patent to be indefinite pursuant to 35 U.S.C. § 112. (Order No. 30 at 9.).

On January 18, 2022, Roku together with the '511 Respondents moved jointly for reconsideration ("Motion for Reconsideration") in pertinent part of Motion Docket No. 1263-015 in view of Order No. 30 and its finding of indefiniteness of claim 5. (Motion Docket No. 1263-028; Mot. for Reconsideration at 1.).

As part of their Motion for Reconsideration, the Parties agreed that in view of the finding of indefiniteness of claim 5 of the '511 patent in Order No. 30, "all remaining issues relating to the '511 Patent are moot (subject to any review of the ALJ's indefiniteness finding by the Commission)." (*Id.* at 2.). The Parties also stipulated that because of Order No. 30, none of the

¹ The Opposition was filed after 5:15 pm on December 10, 2021, and therefore officially received on December 13, 2021. A corrected version was filed on December 13, 2021 which removed redundant text in section II.C. (Doc. ID No. 758484.).

² The Infringement Stipulation was filed after 5:15 pm on December 23, 2021, and therefore officially it was received on December 27, 2021.

Parties would present evidence during the evidentiary hearing on the '511 patent. (*Id.* at 3.).

However, Roku preserved its right to petition for review Order No. 30's holding on the indefiniteness of claim 5 of the '511 patent and all issues that might result from a reversal on appeal of the finding of indefiniteness of claim 5 of the '511 patent. (*Id.*).³

II. LEGAL STANDARD AND DISCUSSION

A. Legal Standard

Summary determination pursuant to Commission Rule 210.18 is analogous to summary judgement under Federal Rule of Civil Procedure 56, and may be granted only where the evidence shows “that there is no genuine issue as to any material fact and that the moving party is entitled to summary determination as a matter of law.” *See* 19 C.F.R. § 210.18(b). “Any party may move with any necessary supporting affidavits for a summary determination in [its] favor

³ On February 17, 2022, Roku filed a motion for leave (“Motion for Leave”), and a memorandum in support thereof (“Mem.”), to supplement the joint Motion for Reconsideration, Motion Docket No. 1263-028, and necessarily the '511 Respondents' MSD, Motion Docket No. 1263-015. (Motion Docket No. 1263-031; Motion at 1, Mem. at 1-2.). Roku asked for an expedited summary determination ruling on the '511 patent. Roku contends it will be prejudiced by a ruling on summary determination that is delayed until the issuance of the ID on Violation and the Commission's expected review Target Date of October 28, 2022 because the '511 patent expires on June 23, 2023. Roku contends there would be little or no time to adjudicate the necessary issues if the Order No. 30 construction of claim 5 is overturned. (Mot. at 1-2.).

On February 24, 2022, the '511 Respondents filed their response (“Response”) to Roku's Motion for Leave and Memorandum in which they took no position on Roku's claim of possible prejudice for an issuance of summary determination on the '511 patent at the time of the issuance of the ID on Violation. The '511 Respondents deferred to the Administrative Law Judge (“ALJ”) on timing of Orders. (Doc. ID No. 763886; Resp. at 2.). The '511 Respondents note that Roku's rationale for its February 17, 2021 Motion for Leave is directly at odds with Roku's August 21, 2021 argument --made only six (6) months earlier-- to Respondents' request that the '511 patent be entered into the early disposition program. In its August 16, 2021 filing, Roku *opposed* the entry into the early disposition program. In that filing, Roku argued that it would be prejudiced by an *early* disposition of the '511 patent. (*See Opp'n to Respondents' Motion for Entry into the Early Disposition Program*, Inv. No. 337-TA-1263, EDIS Doc. ID 749721 at 1-2 (Aug. 16, 2021); *see also id.* at 6 (“[T]he indefiniteness issue is far from being case dispositive and the motion should be denied for that reason.”)).

In the interests of a complete record, Roku's Motion for Leave is *granted*.

upon all or any part of the issues to be determined in the investigation.” 19 C.F.R. § 210.18(a); *see also Certain Digital Processors and Digital Processing Sys., Components Thereof, and Prods. Containing Same*, Inv. No. 337-TA-559, 2006 ITC LEXIS 522, at *6, Order No. 13 (Sept. 6, 2006) (collecting cases). The party moving for summary determination bears the initial burden of establishing that there is an absence of a genuine issue of material fact and that it is entitled to judgment as a matter of law. *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986).

If the movant satisfies its initial burden, the burden then shifts to the non-movant to demonstrate specific facts showing that there is a genuine issue for trial. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). When evaluating a motion for summary determination, the evidence must be examined in a light most favorable to the non-moving party, and all justifiable inferences are to be drawn in its favor. *Anderson*, 477 U.S. at 255 (1986). The non-moving party “must set forth specific facts showing there is a genuine issue of fact.” *Certain Agricultural Tractors Under 50 Power Take-Off Horsepower*, Inv. No. 337-TA-380, Order No. 40 at 3, (August 8, 1996) (citing *Anderson*, 477 U.S. at 248). Summary determination should therefore be granted when a hearing on the matter at issue would serve no useful purpose and the movant is entitled to judgement as a matter of law. *See Certain Recombinant Erythropoietin*, Inv. No. 337-TA-281, U.S.I.T.C. Pub. No. 2186, Initial Determination at 70 (Jan. 10, 1989).

B. Discussion

In their Motion for Reconsideration, Roku and the '511 Respondents state that good cause exists for granting summary determination in-part. (Mot. for Reconsideration at 2.). The Parties noted that in view of their own Infringement Stipulation, and in view of the finding that claim 5 of the '511 patent is indefinite under 35 U.S.C. § 112, they agreed that they would not

present any issues or evidence with respect to the '511 patent during the evidentiary hearing, and they did not.

With respect to the finding of indefiniteness of claim 5 of the '511 patent, pursuant to 35 U.S.C. § 112, the second paragraph: “The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112. In *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014)(“*Nautilus*”), the Supreme Court held that § 112 requires “that a patent’s claims, viewed in light of the specification and prosecution history inform those skilled in the art about the scope of the invention with reasonable certainty.” (*Id.* at 2129.). A claim is required to “provide objective boundaries for those of skill in the art,” and a claim term is indefinite if it “might mean several different things and no informed and confident choice is among the contending definitions.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). A patent claim that is indefinite is invalid. 35 U.S.C. § 282(b)(3)(A).

III. ORDER

Necessarily, because of Order No. 30’s finding of indefiniteness of claim 5 of the '511 patent, consistent with case precedent such as *Nautilus*, Roku had no basis on which to proceed with its allegations and arguments with respect to the '511 patent during the evidentiary hearing or in this Investigation pending review of Order No. 30. According to the Infringement Stipulation with the '511 Respondents, no evidence on the '511 patent was included in the evidentiary hearing.

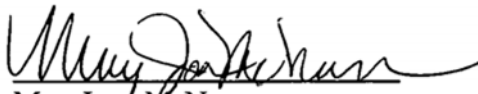
This Order recognizes that not all issues that the '511 Respondents raised in their MSD or that Roku raised in its Opposition to Respondents’ MSD are permanently moot. Indeed, Roku has not waived its arguments: (1) that the '511 patent is not indefinite; (2) that the '511

Respondents have infringed the '511 patent; (3) that there is no indirect infringement; and (4) any other issues that Roku would have a right to raise and argue if the *Markman* claim construction of claim 5 of the '511 patent is overturned on appeal.

Based upon the finding in Order No. 30 that claim 5 of the '511 patent is indefinite, the Motion for Reconsideration, Motion Docket No. 1263-028 is *granted*. Additionally, the '511 Respondents' MSD, Motion Docket No. 1263-015, is *granted in-part* consistent with this Order.

This Initial Determination shall be the determination of the Commission unless a party files a petition for review of the Initial Determination pursuant to 19 C.F.R. § 210.43(a), or the Commission, pursuant to 19 C.F.R. § 210.44, orders, on its own motion, a review of the Initial Determination or certain issues herein.

SO ORDERED.


MaryJoan McNamara
Administrative Law Judge

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached document has been served via EDIS upon the Commission OUII Investigative Attorney and the following parties as indicated, upon the date listed below.

Document	Security	Document Type	Official Rec'd Date	Title
773876	Public	ID/RD - Other Than Final on Violation	06/24/2022 12:34 PM	Initial Determination Granting Summary Determination In-Part on the Invalidity of U.S. Patent No....

Service Date: June 24, 2022

/s/

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF

Inv. No. 337-TA-1263

INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND
RECOMMENDED DETERMINATION ON REMEDY AND BOND

Administrative Law Judge MaryJoan McNamara

(June 28, 2022)

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SELECTED SUMMARY FINDINGS

Pursuant to the Notice of Investigation, 86 Fed. Reg. 26542-43, dated May 14, 2021, this is the Initial Determination (“ID”) of the Investigation in the Matter of Certain Televisions, Remote Controls, and Components Thereof, United States International Trade Commission Investigation No. 337-TA-1263. *See* 19 C.F.R. § 210.42(a).

It is a finding of this ID that Complainant Roku, Inc. (“Complainant” or “Roku”) has not proven by a preponderance of evidence that Respondents Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, CG México Remote Controls, S. de R.L. de C.V., LG Electronics Inc., LG Electronics USA, Inc., Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Charter Communications, Inc., Charter Communications Operating, LLC, Spectrum Management Holding Company, LLC, Altice USA, Inc., Cablevision Systems Corp., Cequel Communications, LLC d/b/a Suddenlink Communications, and WideOpenWest, Inc. (collectively, “Respondents” and with Complainant, the “Parties”) have violated subsection (b) of Section 337 of the Tariff Act of 1930, in the importation into the United States, in the sale for importation, and the sale within the United States after importation of certain televisions, remote controls and components thereof.

It is a finding of this ID that Respondents Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, CG México Remote Controls, S. de R.L. de C.V., Charter Communications, Inc., Charter Communications Operating, LLC, Spectrum Management Holding Company, LLC, Altice USA, Inc., Cablevision Systems Corp., Cequel Communications, LLC d/b/a Suddenlink Communications, and WideOpenWest, Inc. (“the 875

Respondents”) have infringed asserted claims 1-5, 8, and 10 of U.S. Patent No. 8,378,875 (“the ’875 patent”). It is also a finding of this ID that Respondents Altice USA, Inc., Cablevision Systems Corp., Cequel Communications, LLC d/b/a Suddenlink Communications, and WideOpenWest, Inc. infringed asserted claim 9 of the ’875 patent.

It is a finding of this ID that the 875 Respondents have not induced infringement of the asserted claims of the ’875 patent.

It is a finding of this ID that the asserted claims of the ’875 patent are invalid.

It is a finding of this ID that Complainant’s domestic industry product has not satisfied the technical industry prong of the domestic industry requirement for the ’875 patent. It is also a finding of this ID that Complainant has not satisfied the economic prong of the domestic industry requirement under Section 337(a)(3)(B).

If the Commission finds that one or more of the Respondents have violated subsection (b) of Section 337 of the Tariff Act of 1930, this decision recommends: (1) a Limited Exclusion Order with a standard certification provision; and (2) a Cease and Desist Order.


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ABBREVIATIONS

The following shorthand references to the parties, related U.S. agencies, and related proceedings are used in this Initial Determination:

Complainant or Roku	Roku, Inc.
Respondents	Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, CG México Remote Controls, S. de R.L. de C.V., LG Electronics Inc., LG Electronics USA, Inc., Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Charter Communications, Inc., Charter Communications Operating, LLC, Spectrum Management Holding Company, LLC, Altice USA, Inc., Cablevision Systems Corp., Cequel Communications, LLC d/b/a Suddenlink Communications, and WideOpenWest, Inc.
UEI	Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, and CG México Remote Controls, S. de R.L. de C.V.
Charter	Charter Communications, Inc., Charter Communications Operating, LLC, and Spectrum Management Holding Company, LLC
Altice	Altice USA, Inc., Cablevision Systems Corp., and Cequel Communications, LLC d/b/a Suddenlink Communications
WOW	WideOpenWest, Inc.
LG	LG Electronics Inc. and LG Electronics USA, Inc.
Samsung	Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.
875 Respondents	UEI, Charter, Altice, and WOW
511 Respondents	UEI, LG and Samsung
CBP	U.S. Customs and Border Protection
USPTO or PTO	U.S. Patent and Trademark Office
PTAB	Patent Trial and Appeal Board

The following abbreviations for pleadings, exhibits, briefs, transcripts, and Orders are used in this Initial Determination:

Compl.	Complaint
Am. Compl.	Amended Complaint
Resp.	Response of Respondents to the Notice of Investigation and Complaint Under Section 337 of the Tariff Act of 1930, as Amended
CX	Complainant's exhibit
CDX	Complainant's demonstrative exhibit
CPX	Complainant's physical exhibit
CPBr.	Complainant's Pre-Hearing Brief
CBr.	Complainant's Initial Post-Hearing Brief
CRBr.	Complainant's Post-Hearing Reply Brief
CPSt.	Complainant's Pre-Hearing Statement
JX	Joint exhibit
RX	Respondents' exhibit
RDX	Respondents' demonstrative exhibit
RPX	Respondents' physical exhibit
RPBr.	Respondents' Pre-Hearing Brief
RBr.	Respondents' Initial Post-Hearing Brief
RRBr.	Respondents' Post-Hearing Reply Brief
RPSt.	Respondents' Pre-Hearing Statement
Tr.	Evidentiary hearing transcript
Dep. Tr.	Deposition transcript

CMBr.	Complainant's <i>Markman</i> Brief
RMBr.	Respondents' <i>Markman</i> Brief
Joint CC Chart	Joint Post-Hearing Claim Construction Chart (Doc. ID No. 750582 (Aug. 30, 2021))
<i>Markman</i> Order I	Order No. 30 (January 14, 2022)
<i>Markman</i> Order II	Order No. 32 (January 21, 2022)

The following shorthand references to certain products and patents at issue are used in this Initial Determination:

'875 patent	U.S. Patent No. 8,378,875
'511 patent	U.S. Patent No. 7,388,511 ¹
Asserted Patents	The '875 patent and the '511 patent

UEI Accused Products

U.S. Patent No.	Asserted Claims	UEI Accused Product Series
8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none"> • URC 2020 (Champ 2) • URC 2025 (Champ 4) • URC 2060 (Simple) • URC 2068 (Pulse RF) • URC 2069 (Pulse IR) • URC 2125 (Champion Plus) • URC 2135 (Experience / WOW! Experience Remote) • URC 6244 NOVA MR BORDER • URC 6246 NOVA SIMPLE SENIOR TV REMOTE 2020 • URC 8200 (Slate) • URC 8820 (Cox) • INSIGNIA REPLACEMENT REMOTE (FOR SAMSUNG TV / LG TV) • MXv4 MTS Series • MXv4 RF Series
8,378,875	1-5, 8, 10, 14	<ul style="list-style-type: none"> • URC 1160 (Charter Spectrum RF4CE 2018 / URC 1160 Charter Spectrum 2015) • URC 7880 OFA Smart Control 8 • URC 7935 OFA Streamer Remote

¹ The '511 patent was not adjudicated in this Investigation. (See Section V.B.2., *infra*).

	U.S. Patent No.	Asserted Claims	UEI Accused Product Series
			<ul style="list-style-type: none"> • URC 9720B-A UEI INNOVATIVE SYSTEMS INSINQ VOICE+ 2018 • ONN 6 DEVICE UNIVERSAL REMOTE
	8,378,875	1-4, 8-10, 14	<ul style="list-style-type: none"> • URC 2220 Cox Mini IR • URC 3220 Cox Mini RF
Charter Accused Products	U.S. Patent No.	Asserted Claims	The Charter Accused Products
	8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none"> • URC 2060 • URC 2068 Pulse RF • URC 2069 Pulse IR
	8,378,875	1-5, 8, 10, 14	<ul style="list-style-type: none"> • URC 1160 Charter Spectrum RF4CE 2018 (aka SR-002-R) • URC 1160 Charter Spectrum 2015 (aka SR-002-R)
Altice Accused Products	U.S. Patent No.	Asserted Claims	The Altice Accused Products
	8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none"> • URC 2068 Pulse RF • URC 2069 Pulse IR
WOW Accused Product	U.S. Patent No.	Asserted Claims	The WOW Accused Products
	8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none"> • WOW Experience Remote (URC 2135)
Representative Accused Products or 875 Accused Products	UEI OFA Streamer Remote (URC 7935); Charter Spectrum RF4CE Remote (URC 1160); Altice/Charter Pulse RF Remote (URC 2068); and WOW Experience Remote (URC 2135)		
DI Product	Gazelle remote		

I. SUMMARY OF FINDINGS

A summary of findings in this decision is provided below.

Table No. 1: Summary of Findings

Products	Patent	Claims	Determination
All Representative Accused Products	'875 patent	1-5, 8, 10	Infringed; no violation.
Representative Accused Products Altice/Charter Pulse RF Remote (URC 2068) and WOW Experience Remote (URC 2135)	'875 patent	1-5, 8-10	Infringed; no violation.
DI Product	'875 patent	None	Not satisfied.

II. BACKGROUND

A. Institution and Selected Procedural History

On April 8, 2021, Complainant Roku, Inc. (“Complainant” or “Roku”) filed a complaint (“Complaint”) under Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337. (86 Fed. Reg. 26542-43 (May 14, 2021).). A supplement to the Complaint was filed on April 9, 2021, and an Amended Complaint (“Amended Complaint”) was filed on April 27, 2021. (*Id.*). The Complaint, as supplemented and amended, alleged infringement of certain claims of U.S. Patent No. 8,378,875 (“the ’875 patent”) and U.S. Patent No. 7,388,511 (“the ’511 patent”). (*Id.*).

On April 22, 2021, Respondents Universal Electronics, Inc., Universal Electronics BV, UEI Brasil Controles Remotos Ltda., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., and CG México Remote Controls, S.

de R.L.de C.V. requested that in the event the Commission instituted an investigation, it use the Early Disposition Program to determine whether Roku satisfies the economic prong of the domestic industry requirement. (*See* Doc. ID No. 740704 (Apr. 22, 2021).). Roku filed a response to that request on April 26, 2021. (*See* Doc. ID No. 740956 (Apr. 26, 2021).). On May 10, 2021, the Commission issued an order denying the request and determining not to use the Early Disposition Program. (*See* Commission Order Denying Request for Entry Into Early Disposition Program (May 10, 2021).).

On May 10, 2021, the Commission voted to institute this Investigation pursuant to subsection (b) of Section 337 of the Tariff Act of 1930, as amended, to determine:

whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products identified in paragraph (2) by reason of infringement of one or more of claims 1-5, 8-11, and 14 of the '875 patent and claim 5 of the '511 patent[.]

86 Fed. Reg. 26542-43 (May 14, 2021).

The Notice of Investigation (“NOI”) was published on May 14, 2021. (*Id.*). The NOI names the following entities as respondents: Universal Electronics, Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, UEI Brasil Controles Remotos Ltda.,² CG México Remote Controls, S. de R.L. de C.V., LG Electronics Inc., LG Electronics USA, Inc., Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Charter Communications, Inc., Charter Communications Operating, LLC, Spectrum Management Holding Company, LLC, Altice USA, Inc., Cablevision Systems Corp., Cequel Communications, LLC d/b/a Suddenlink

² UEI Brasil Controles Remotos Ltda. was terminated from this Investigation. (Order No. 20 (Nov. 19, 2021); not reviewed by Comm’n Notice (Dec. 14, 2021).).

Communications, and WideOpenWest, Inc. (collectively, “Respondents” and with Roku, the “Parties”). (*Id.*).

Pursuant to Order No. 11, a *Markman* hearing was held on August 19, 2021. (Order No. 11 (Aug. 13, 2021); *see also* Doc. ID No. 750009 (*Markman* Hr’g Tr.) (Aug. 19, 2021)).

Pursuant to Order No. 12, a continuation of the *Markman* hearing was held on September 14, 2021. (Order No. 12 (Aug. 31, 2021); *see also* Doc. ID No. 751681 (*Markman* Hr’g Tr.) (Sept. 14, 2021)). A first *Markman* order construing certain claim terms for the ’511 patent and certain agreed claim terms for the ’875 patent issued on January 14, 2022. (*See Markman* Order I.). A second *Markman* order construing additional claim terms for the ’875 patent issued on January 21, 2022. (*See Markman* Order II.).

On November 19, 2021, an Initial Determination issued that granted Roku’s motion for partial termination of the investigation based upon withdrawal of claim 11 of the ’875 patent. (Order No. 19 (Nov. 19, 2021); *not reviewed by* Comm’n Notice (Dec. 14, 2021)).

On November 19, 2021, an Initial Determination issued that granted Roku’s motion for partial termination of the investigation with respect to Respondent UEI Brasil Controles Remotos Ltda. (Order No. 20 (Nov. 19, 2021); *not reviewed by* Comm’n Notice (Dec. 14, 2021)).

Thus, pending in this Investigation are claims 1-5, 8-10, and 14 of the ’875 patent and claim 5 of the ’511 patent.³

Respondents filed six (6) motions *in limine* (“MILs”) before the evidentiary hearing (“Hearing”).⁴ Respondents’ MILs, and the rulings on these motions, are summarized in Table

³ An Initial Determination granting in-part a motion for summary determination of indefiniteness with respect to the ’511 patent was issued on June 24, 20022. (*See* Section V.B.2, *infra*).

⁴ Roku did not file any motions *in limine*.

No. 2 below.⁵

Table No. 2: Respondents' MILs

MIL No.	Issue	Ruling
MIL No. 1 (Motion Docket No. 1263-017)	MIL to exclude exhibits untimely produced after the close of fact discovery ⁶	Granted-in-Part, Denied-in-Part. (Order No. 29 at 3-6 (Jan. 14, 2022).).
MIL No. 2 (Motion Docket No. 1263-018)	MIL to exclude late disclosed domestic industry evidence related to the '875 patent ⁷	Granted-in-Part, Denied-in-Part. (Order No. 29 at 6-11 (Jan. 14, 2022).).
MIL No. 3 (Motion Docket No. 1263-019)	MIL to preclude Complainant from offering evidence or testimony relating to tests conducted by Mr. Mendenhall at the direction of trial counsel ⁸	Denied. (Order No. 29 at 11-12 (Jan. 14, 2022).).

⁵ Respondents as a group filed six motions *in limine*. (See Motion Docket Nos. 1263-017, 1263-018, 1263-019, 1263-020, 1263-021, and 1263-022.). Order No. 24, however, struck Respondents' MIL Nos. 4-6, i.e., Motion Docket Nos. 1263-1220, 1263-021, and 1263-022, as exceeding the allowed number of MILs. (See Order No. 24 (Dec. 27, 2021).). On December 28, 2021, Respondents filed a motion for leave to have its MIL Nos. 1, 2, and 4 considered, i.e., Motion Docket Nos. 1263-017, 1263-018, and 1263-020. (See Motion Docket No. 1263-025 (Dec. 28, 2021).). That motion was denied on December 29, 2021. (Order No. 26 (Dec. 29, 2021).).

⁶ Respondents sought to preclude Roku from relying on exhibits at the evidentiary hearing that it produced after the close of fact discovery. (Respondents' MIL No. 1 at 1.).

⁷ Respondents sought to exclude certain evidence related to Roku's Gazelle product. (Respondents' MIL No. 2 at 1.). Specifically, Respondents sought to exclude exhibits produced after the close of fact discovery and testimony regarding the same, testimony regarding a prototype that may or may not have been created in December 2021, and testimony regarding alleged developments of the Gazelle after the close of fact discovery. (*Id.* at 2-3.).

⁸ Respondents sought to preclude Roku from offering evidence or testimony relating to tests conducted by Mr. David Mendenhall as purported evidence that Roku has itself "used" the method of claim 5 of the '511 patent. (Respondents' MIL No. 3 at 1.). Mr. Mendenhall was Roku's Senior Director of Software Engineering. (CPSt. at 2.). Roku identified him as a fact witness to "testify about the parties the operation of the domestic industry products." (*Id.*).

Roku submitted two (2) motions to strike, which are summarized in Table No. 3 below.

Table No. 3: Complainant's Motions to Strike

Motion No.	Issue	Ruling
Motion to Strike Dr. Henry Houh's Testimony ⁹ (Motion Docket No. 1263-029)	Motion to strike testimony of Dr. Henry Houh that was not disclosed in his expert reports or deposition testimony ¹⁰	Denied. (Order No. 34 (Feb. 4, 2022).).
Motion to Strike Portion of Respondents' Reply Post-Hearing Brief that Relies on Evidence Related to Events After the Close of Fact Discovery (Motion Docket No. 1263-032)	Motion to the strike a portion of Respondents' Reply Post-Hearing Brief that included arguments based on a document not admitted into evidence ¹¹	Denied. (Order No. 38 (June 24, 2022).).

The Hearing was held via Webex from January 24-26, 2022.¹²

⁹ When he testified during the Hearing on January 26, 2022, Dr. Henry Houh was a Founder and member of the Board of Directors of BlocksCAD Inc., Founder and President of H3XL Inc. d/b/a/ Einstein's Workshop, and Technical Consultant of Houh Consulting Inc. (RPSt. at Ex. 1.). Respondents identified Dr. Houh as an expert witness to testify about matters relating to the technical background and state of the art relevant to the asserted claims, interpretation, invalidity, the accused products, the accused functionalities, Respondents' non-infringement of the asserted claims, and Roku's lack of the technical prong of Domestic Industry as they relate to the '875 patent. (*Id.* at 1-2.).

¹⁰ Roku sought to strike testimony that Dr. Houh offered during the Hearing of an allegedly previously undisclosed opinion regarding how the Philips PMDVD6 prior art remote control satisfies claim limitation 4(c) of the '875 patent. (Motion Docket No. 1263-029 at 1.).

¹¹ Roku sought to strike the first full paragraph of page 57 of Respondents' Reply Post-Hearing Brief that included arguments based on a Roku document (JX-0793C) created after the close of fact discovery. (Motion Docket No. 1263-032 at 1.).

¹² The 511 Respondents, i.e., LG and Samsung, did not participate in the Hearing. (*See* Section V.B.2, *infra*, (discussion of invalidity of claim 5 of the '511 patent and pending ID).).

B. The Parties

1. Complainant Roku, Inc.

Roku is a corporation organized under the laws of Delaware, with its principal place of business in San Jose, CA. (Am. Compl. at ¶ 10.). Roku is engaged in streaming media content to the TV, manufactures and sells Roku streaming players, Roku-branded speakers and accessories, and also partners with third party TV manufacturers for the development of Roku-branded TVs. (*Id.* at ¶ 11.).

2. Respondents

a) Universal Electronics, Inc.

Universal Electronics, Inc. is a Delaware corporation with its headquarters in Scottsdale, AZ. (Am. Compl. at ¶ 13; UEI Resp. at ¶ 13.).

b) Gemstar Technology (Qinzhou) Co. Ltd.

Gemstar Technology (Qinzhou) Co. Ltd. is a company organized under the laws of the People's Republic of China with its principal place of business in Guangxi Province, China. (Am. Compl. at ¶ 14; UEI Resp. at ¶ 14.). Gemstar Technology (Qinzhou) Co. Ltd. is a wholly-owned subsidiary of Universal Electronics, Inc. (Am. Compl. at ¶ 20; UEI Resp. at ¶ 20.).

c) Gemstar Technology (Yangzhou) Co. Ltd.

Gemstar Technology (Yangzhou) Co. Ltd. is a company organized under the laws of the People's Republic of China with its principal place of business in Jiangsu Province, China. (Am. Compl. at ¶ 15; UEI Resp. at ¶ 15.). Gemstar Technology (Yangzhou) Co. Ltd. is a wholly-owned subsidiary of Universal Electronics, Inc. (Am. Compl. at ¶ 20; UEI Resp. at ¶ 20.).

d) C.G. Development Ltd.

C.G. Development Ltd. is a company organized under the laws of Hong Kong with its

principal place of business in Hong Kong. (Am. Compl at ¶ 16; UEI Resp. at ¶ 16.). C.G. Development Ltd. is a wholly-owned subsidiary of Universal Electronics, Inc. (Am. Compl at ¶ 20; UEI Resp. at ¶ 20.).

e) Universal Electronics BV

Universal Electronics BV is a company organized under the laws of the Netherlands with its principal place of business in Enschede, Netherlands. (Am. Compl. at ¶ 17; UEI Resp. at ¶ 17.). Universal Electronics BV is a wholly-owned subsidiary of Universal Electronics, Inc. (Am. Compl. at ¶ 20; UEI Resp. at ¶ 20.).

f) CG México Remote Controls, S. de R.L. de C.V.

CG México Remote Controls, S. de R.L. de C.V. is a company organized under the laws of Mexico with its principal place of business in Nuevo Leon, Mexico. (Am. Compl. at ¶ 19; UEI Resp. at ¶ 19.). CG México Remote Controls, S. de R.L. de C.V. is a wholly-owned subsidiary of Universal Electronics, Inc. (Am. Compl. at ¶ 20; UEI Resp. at ¶ 20.).

g) LG Electronics Inc.

LG Electronics Inc. is a South Korean corporation with its principal place of business in Seoul, Korea. (Am. Compl. at ¶ 24; LG Resp. at ¶ 24.).

h) LG Electronics USA, Inc.

LG Electronics USA, Inc. is a Delaware corporation with its principal place of business in Englewood Cliffs, NJ. (Am. Compl. at ¶ 25; LG Resp. at ¶ 25.). LG Electronics USA, Inc. is a wholly-owned subsidiary of LG Electronics Inc. (Am. Compl. at ¶ 26; LG Resp. at ¶ 26.).

i) Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd. is a corporation organized under the laws of Korea with its principal place of business in Gyeonggi-do, Korea. (Am. Compl. at ¶ 29; Samsung Resp. at ¶

29.).

j) Samsung Electronics America, Inc.

Samsung Electronics America, Inc. is a corporation organized under the laws of the state of New York, having its principal place of business in Ridgefield Park, NJ. (Am. Compl. at ¶ 30; Samsung Resp. at ¶ 30.). Samsung Electronics America, Inc. is a wholly-owned subsidiary of Samsung Electronics Co., Ltd. (Am. Compl. at ¶ 31; Samsung Resp. at ¶ 31.).

k) Charter Communications, Inc.

Charter Communications, Inc. is a Delaware corporation with its principal place of business in Stamford, CT. (Am. Compl. at ¶ 34; Charter Resp. at ¶ 34.).

l) Charter Communications Operating, LLC

Charter Communications Operating, LLC is a Delaware company with its principal place of business in St. Louis, MO. (Am. Compl. at ¶ 35; Charter Resp. at ¶ 35.). Charter Communications Operating, LLC is a subsidiary of Charter Communications, Inc. (Am. Compl. at ¶ 37; Charter Resp. at ¶ 37.).

m) Spectrum Management Holding Company, LLC

Spectrum Management Holding Company, LLC is a Delaware company with its principal place of business in St. Louis, MO. (Am. Compl. at ¶ 36; Charter Resp. at ¶ 36.). Spectrum Management Holding Company, LLC is a subsidiary of Charter Communications, Inc. (Am. Compl. at ¶ 37; Charter Resp. at ¶ 37.).

n) Altice USA, Inc.

Altice USA, Inc. is a Delaware corporation with its principal place of business in Long Island City, NY. (Am. Compl. at ¶ 39; Altice Resp. at ¶ 39.).

o) Cablevision Systems Corp.

Cablevision Systems Corp. is a Delaware corporation with its principal place of business in Bethpage, NY. (Am. Compl. at ¶ 40; Altice Resp. at ¶ 40.). Cablevision Systems Corp. is a subsidiary of Altice USA, Inc. (Am. Compl. at ¶ 42; Altice Resp. at ¶ 42.).

p) Cequel Communications, LLC d/b/a Suddenlink Communications

Cequel Communications, LLC d/b/a Suddenlink Communications is a Delaware company with its principal place of business in Long Island City, NY. (Am. Compl. at ¶ 41; Altice Resp. at ¶ 41.). Cequel Communications, LLC d/b/a Suddenlink Communications is a subsidiary of Altice USA Inc. (Am. Compl. at ¶ 42; Altice Resp. at ¶ 42.).

q) WideOpenWest, Inc.

WideOpenWest, Inc. (“WOW”) is a Delaware corporation with its principal place of business in Englewood, CO. (Am. Compl. at ¶ 44; WOW Resp. at ¶ 44.).

C. Products at Issue

1. The Accused Products

A summary of the products Complainant has accused of infringing the ’875 patent is provided in Table Nos. 4-7 below.

Table No. 4: UEI Accused Products

U.S. Patent No.	Asserted Claims	UEI Accused Product Series
8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none">• URC 2020 (Champ 2)• URC 2025 (Champ 4)• URC 2060 (Simple)• URC 2068 (Pulse RF)• URC 2069 (Pulse IR)• URC 2125 (Champion Plus)• URC 2135 (Experience / WOW! Experience Remote)• URC 6244 NOVA MR BORDER• URC 6246 NOVA SIMPLE SENIOR TV REMOTE 2020• URC 8200 (Slate)• URC 8820 (Cox)• INSIGNIA REPLACEMENT REMOTE (FOR SAMSUNG TV / LG TV)• MXv4 MTS Series• MXv4 RF Series
8,378,875	1-5, 8, 10, 14	<ul style="list-style-type: none">• URC 1160 (Charter Spectrum RF4CE 2018 / URC 1160 Charter Spectrum 2015)• URC 7880 OFA Smart Control 8• URC 7935 OFA Streamer Remote
		<ul style="list-style-type: none">• URC 9720B-A UEI INNOVATIVE SYSTEMS INSINQ VOICE+ 2018• ONN 6 DEVICE UNIVERSAL REMOTE
8,378,875	1-4, 8-10, 14	<ul style="list-style-type: none">• URC 2220 Cox Mini IR• URC 3220 Cox Mini RF

(CBr. at 6-7.).

Table No. 5: Charter Accused Products

U.S. Patent No.	Asserted Claims	The Charter Accused Products
8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none">• URC 2060• URC 2068 Pulse RF• URC 2069 Pulse IR
8,378,875	1-5, 8, 10, 14	<ul style="list-style-type: none">• URC 1160 Charter Spectrum RF4CE 2018 (aka SR-002-R)• URC 1160 Charter Spectrum 2015 (aka SR-002-R)

(*Id.* at 7.).

Table No. 6: Altice Accused Products

U.S. Patent No.	Asserted Claims	The Altice Accused Products
8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none">• URC 2068 Pulse RF• URC 2069 Pulse IR

(*Id.*).

Table No. 7: WOW Accused Product

U.S. Patent No.	Asserted Claims	The WOW Accused Products
8,378,875	1-5, 8-10, 14	<ul style="list-style-type: none">• WOW Experience Remote (URC 2135)

(*Id.*).

Collectively, these products are referred to as the Accused Products. In addition, Complainant asserted that for the purposes of infringement, the following four (4) products are representative of the Accused Products (“Representative Accused Products”): (i) the UEI OFA Streamer Remote (URC 7935); (ii) the Charter Spectrum RF4CE Remote (URC 1160); (iii) the Altice/Charter Pulse RF Remote (URC 2068); and (iv) the WOW Experience Remote (URC 2135). (*See* CBr. at 8; *see id.* at Ex. 3.).

2. The Domestic Industry Product

For the ’875 patent, Roku’s asserted Domestic Industry Product (“DI Product” or “Gazelle remote”) is the “Roku remote control code-name Gazelle that is currently under development and that will incorporate the functionality described in the Feature Guide: Unified TV IR Code Configuration.” (CBr. at 8.).

III. JURISDICTION, IMPORTATION, AND STANDING

A. The Commission Has Jurisdiction

To have the authority to decide a case, a court or agency must have both subject matter jurisdiction and jurisdiction over either the parties or the property involved. *See Certain Steel Rod Treating Apparatus and Components Thereof*, Inv. No. 337-TA-97, Comm’n Opinion, 215 U.S.P.Q. 229, 231 (U.S.I.T.C. 1981). For the reasons discussed below, the facts support a finding that the Commission has jurisdiction over this Investigation.

B. Subject Matter Jurisdiction

The Commission has subject matter jurisdiction over this Investigation because Complainant alleged that Respondents violated 19 U.S.C. §1337(a)(1)(B). *See Amgen v. U. S. Int’l Trade Comm’n*, 902 F.2d 1532, 1536 (Fed. Cir. 1990). Respondents did not contest that the Commission has subject matter jurisdiction. (*See generally* RBr.; RRBBr. at 5.).

C. Personal Jurisdiction

Respondents did not dispute that the Commission has personal jurisdiction over each Respondent. (*See generally* RBr.; RRBBr. at 5.). Moreover, Respondents have appeared and fully participated in this Investigation. Thus, the Commission has personal jurisdiction over the Respondents. *See, e.g., Certain Windshield Wiper Devices and Components Thereof* (“Wiper Devices”), Inv. No. 337-TA-881, Initial Determination at 5 (May 8, 2014) (unreviewed in relevant part) (Doc. ID No. 534255).

D. In Rem Jurisdiction

Respondents did not dispute that the Commission has *in rem* jurisdiction over the Accused Products. (*See generally* RBr.; RRBBr. at 5.). In addition, there is no dispute that the Accused Products are manufactured abroad and imported into the United States. (*See* JX-0807C

at 11-33; UEI Resp. at ¶¶ 13-23.). Accordingly, the Commission has *in rem* jurisdiction over the Accused Products. *See, e.g., Wiper Devices*, Inv. No. 337-TA-881, Initial Determination at 5 (*in rem* jurisdiction exists when importation requirement is satisfied); *see also Sealed Air Corp. v. Int’l Trade Comm’n*, 645 F.2d 976, 985-86 (C.C.P.A. 1981) (noting the Commission has jurisdiction over imported goods).

E. Importation

Section 337(a)(1)(B) applies to the “[t]he importation into the United States, the sale for importation, or the sale within the United States after importation” of articles that infringe a valid and enforceable United States patent.” 19 U.S.C. § 1337(a)(1)(B). A single instance of importation is sufficient to satisfy the importation requirement of Section 337. *Certain Optical Disc Drives, Components Thereof, and Prods. Containing the Same*, Inv. No. 337-TA-897, Order No. 101 at 3 (Sept. 22, 2014) (citations omitted) (Doc. ID No. 543438). While Respondents dispute importation as to Charter, Altice, and WOW, they do not dispute importation as to any other respondents. (*See* RRBBr. at 5.).

To determine whether the importation requirement is satisfied as to a particular respondent, the Commission applies a fact-intensive inquiry as to the extent of a respondent’s conduct in causing infringing articles to enter the United States. *See Certain Apparatus for the Continuous Prod. of Copper Rod*, Inv. No. 337-TA-52, Recommended Determination, 1979 WL 61155, at *13-14 (Aug. 13, 1979) (finding that a respondent was an importer and “put in motion the importation” of those articles where it purchased equipment that it was aware was produced in Germany), *not reviewed by Comm’n Determination & Order*, USITC Pub. No. 1017 (Nov. 23, 1979); *Certain Large Video Matrix Display Sys. & Components Thereof*, Inv. No. 337-TA-75, Order No. 14, 1980 WL 140805, at *1-2 (June 30, 1980) (considering the “degree” of

involvement in causing the accused product to enter the country, and concluding that the “direct nature of the involvement of the [respondents] and the magnitude of their purchase” showed that they were importers), *not reviewed by Comm’n Op.* (June 19, 1981); *Certain Plastic-Capped Decorative Emblems*, Inv. No. 337-TA-121 (Oct. 1, 1982), Order No. 11, 1982 WL 213041, at *1-2 (finding respondent to be an importer where it purchased articles from a Canadian corporation “f.o.b. Buffalo” and caused the importation to occur), *not reviewed by Comm’n Action & Order* (Dec. 1, 1982); *Certain Cigarettes & Packaging Thereof*, Inv. No. 337-TA-643, Comm’n Op., 2009 WL 6751505, at *4-6 (Oct. 1, 2009) (concluding that the respondent was an importer where its acts were “integral to the importation”)¹³; *Certain Digital Set-Top Boxes & Components Thereof*, Inv. No. 337-TA-712, Initial Determination, 2011 WL 2567284, at *10-12 (May 20, 2011) (concluding that “Cablevision was sufficiently involved in the manufacture and importation of the Cisco STBs to meet the importation requirement”), *not reviewed by Comm’n Notice* (July 21, 2011).

Roku alleged that Charter, Altice, and WOW are sufficiently involved with the design, manufacture, and importation of the Accused Products to be considered as importers. (CBr. at 9.). For example, Roku asserted that Charter, Altice, and WOW “have the power to control the product specifications, including rejecting/accepting the development testing plan, inspecting the products, and changing and/or cancelling the orders due to specification changes.” (*Id.* at 10.). Roku claimed that they also control the packaging and transportation of the Accused Products and have knowledge that the Accused Products are manufactured outside of the U.S. and imported into the U.S. (*Id.*). Moreover, Roku asserted that they require UEI to deliver the

¹³ In that opinion, the Commission clearly stated, “we find [respondent] need not be an ‘owner, importer, or consignee’ in order to violate section 337.” *Certain Cigarettes*, Comm’n Op., at *6.

Accused Products to their own sites and destinations in the U.S. and control the volume of Accused Products that enter the U.S. through forecasts and orders sent to UEI. (*Id.*).

Respondents, however, argued that the Commission lacks jurisdiction over Charter, Altice, and WOW because “they do not import into the U.S., sell for importation into the U.S., or sell the 875 Accused Products after importation.” (RRBr. at 5 (citing JX-0794C at 15-17 (Rog. Nos. 4-6); JX-0796C at 15-18 (Rog. Nos. 4-6); JX-0812C at 15-18 (Rog. Nos. 4-6))). Instead, Respondents claimed that UEI alone imports the Accused Products and Charter, Altice, and WOW distribute, but do not sell, the Accused Products to their customers. (*Id.* (citing JX-0794C at 15 (Rog. No. 4); JX-0796C at 15 (Rog. No. 4); JX-0812C at 15 (Rog. No. 4))).

The evidence shows that while UEI imports the Accused Products, Charter, Altice, and WOW are also sufficiently involved in the manufacture and importation of the Accused Products to meet the importation requirement. For example, Charter, Altice, and WOW have the ability to accept or reject development testing plans that ensure that the Accused Products meet a defined set of product requirements, or to perform acceptance testing on the Accused Products. (*See* JX-0193C at §§ 2, 6; JX-0559C at §§ 6-7; JX-0612C at § 4, 6). The evidence also shows that Charter, Altice, and WOW were aware that the Accused Products were manufactured outside of the U.S. and imported into the U.S. (*See* JX-0613C (Dino Starinieri Depo. Tr.)¹⁴ at 23:19-21, 29:15-22, 32:1-7; CX-1404C at 4-5; JX-0618C (John Markowski Depo. Tr.)¹⁵ at 16:20-17:7;

¹⁴ When he testified during the Hearing on January 25, 2022, Mr. Dino Starinieri was Group Vice President of Advanced Engineering at Charter Communications, Inc. (Tr. (Starinieri) at 474:22-475:4.). Respondents identified Mr. Starinieri as a fact witness to testify about matters relating to the Accused Products. (RPSt. at 4.).

¹⁵ When he provided his deposition testimony on October 8, 2021, Mr. John Markowski was Vice President of Engineering Technology at Altice USA. (JX-0618C (Markowski Depo. Tr.) at 7:1-6.). Alice designated Mr. Markowski as its corporate representative to testify on certain topics. (*Id.* at 10:15-18.).

CX-1399C at 4-5; JX-0608C (Michelle MacFee Depo. Tr.)¹⁶ at 32:21-33:4; CX-1424C at 4-5.).

In addition, they dictate the packaging and transportation of the Accused Products. (See JX-0193C at § 4; JX-0559C at § 5; JX-0612C at § 5.). Charter, Altice, and WOW also require UEI to deliver the Accused Products to their own sites and destinations in the U.S. and influence the volume of Accused Products that enter the U.S. based on forecasts and purchase orders sent to UEI. (See JX-0193C at §§ 3, 4, 6.3; JX-0559C at §§ 3, 5, 7; JX-0612C at §§ 1, 2, 5; JX-0241C at 1-2; JX-0618C (Markowski Depo. Tr.) at 21:11-23:13.). Therefore, in weighing the evidence, along with the degree of their knowledge of and involvement in manufacturing and causing the Accused Products to enter the country, the importation requirement is satisfied as to Charter, Altice, and WOW.

Accordingly, the importation requirement of Section 337 has been satisfied as to all Respondents.

F. Complainant Has Standing in the Commission

In addition to subject matter jurisdiction and *in rem* jurisdiction, a complainant must also have standing to bring suit. See *SiRF Technology, Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319, 1326 (Fed. Cir. 2016) (standing to bring an infringement suit is the same under Commission Rules as it would be in a Federal District Court case); *Certain Optical Disc Drives, Components Thereof and Prods. Containing Same*, Inv. No. 337-TA-897, Opinion Remanding the Investigation at 4 (Jan. 7, 2015). Commission Rule 210.12 requires that intellectual property-based complaints filed by a private complainant “include a showing that at least one complainant

¹⁶ When she provided her deposition on October 6, 2021, Ms. Michelle MacFee was Vice President of Residential Products at WOW. (JX-0608C (MacFee Dep. Tr.) at 10:1-9.). WOW designated Ms. MacFee as its corporate representative to testify on certain topics. (*Id.* at 13:19-21.).

is the exclusive license of the subject intellectual property.” 19 C.F.R. § 210.12(a)(7).

Ownership of a patent initially vests in the inventor(s) as a matter of law. *Regents of the University of New Mexico v. Knight*, 321 F.3d 1111, 1118-19 (Fed. Cir. 2003). Inventors, however, can assign all or part of their interests in a patent to another person or entity by means of a written assignment. *Id.* “Ownership depends upon ‘the substance of what was granted’ through assignment.” *Israel BioEng’g Project v. Amgen Inc.*, 475 F.3d 1256, 1265 (Fed. Cir. 2007). Moreover, “a court must carefully consider the intention of the parties and the language of the grant” in order to construe the substance of an assignment. *Id.* Although interpretation of contracts is generally governed by state law, a patent assignment is interpreted pursuant to federal law when it is intimately related to the issue of standing. *Abraxis Bioscience, Inc. v. Navinta LLC*, 625 F.3d 1359, 1364 (Fed. Cir. 2010).

Respondents asserted that Roku does not have standing to assert the ’875 and ’511 patents. (RRBr. at 64.). Respondents argued that while Roku claims to have purchased the Asserted Patents from Home Control Singapore Pte. Ltd. (“Omni Singapore”), it has not presented evidence establishing that Omni Singapore acquired the Asserted Patents from the original assignor Koninklijke Philips N.V. (“Philips”). (*Id.*). Rather, Respondents contended that Philips assigned the Asserted Patents to a different entity, Home Control International Limited (“Omni International”). (*Id.*).

Roku, however, alleged that “Respondents mischaracterize the chain of title.” (CBr. at 76.). Roku asserted that when the relevant provisions of the IP Agreement are considered as a whole, it is clear that the Asserted Patents were assigned directly from Philips to Omni Singapore. (*Id.*). While Roku acknowledged that the [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (*Id.* at 76-77.). Moreover, Roku explained that [REDACTED]

[REDACTED]

[REDACTED] (*Id.* at 77.). Roku contended that the assignment, which was executed and recorded with the USPTO, confirmed that the Asserted Patents were assigned directly from Philips to Omni Singapore. (*Id.*).

Here, [REDACTED]

[REDACTED] (*See* RX-0459C). [REDACTED]

[REDACTED]

[REDACTED] (*Id.* at 3.). However, [REDACTED]

[REDACTED]

[REDACTED] (*Id.*). Specifically, [REDACTED]

[REDACTED] (*Id.*).

[REDACTED]

[REDACTED] (*See id.* at 17.). A Deed of Assignment that was [REDACTED]

[REDACTED] was executed on April 30, 2015 and recorded with the USPTO. (*See* JX-0003 at 8-11; JX-0004 at 6-9.). Thus, as Roku asserted, [REDACTED]

[REDACTED] and the Deed of Assignment, as well as the parties' course of conduct, confirm that the Asserted Patents were assigned from Philips to Omni Singapore, which is exactly what the parties intended. *See Israel BioEng'g Project*, 475 F.3d at 1265.

Subsequently, the Asserted Patents were sold by Omni Singapore to Roku. (*See* JX-0042C.).

Accordingly, Roku has standing to bring suit for infringement under Section 337 because it owns all right, title, and interest in and to the Asserted Patents. (*See also* Compl. at ¶¶ 68, 74, Exs. 3, 4.).

IV. LEVEL OF ORDINARY SKILL IN THE ART

As previously explained in *Markman* Order I, both parties' proposed definitions, as defined in Table No. 8 below, were accepted as appropriate for the level of ordinary skill in the art for both the '875 and '511 patents.

Table No. 8: Parties' Definitions of Level of Ordinary of Skill in the Art

Complainant's Definition	Respondents' Definition
Roku has proposed that as of the earliest filing dates of the '875 and '511 patents, a person of ordinary skill in the art would have had "a bachelor's degree in electrical engineering, computer science, or equivalent degree with two years of work experience relating to communications or consumer electronics."	Respondents have proposed that as of the relevant priority date of each patent, a person of ordinary skill in the art would have had "a bachelor's degree that involved coursework in interface design and computer programming, for example, electrical engineering, computer engineering, computer science, industrial engineering, physics, or a similar degree, and at least one year of real-world work experience in the field of user interfaces, human machine interface, or software programming," and added that "[a]dditional education might substitute for some of the experience, and substantial experience might substitute for some of the educational background."

(*Markman* Order I at 19-20.).

The Parties' definitions of a person of ordinary skill in the art overlap to a certain extent. In this case, the Respondents "one year" work requirement as for experience in conjunction with education is used as a "minimum" or "floor." Roku's two years of work experience exceeds the

requirement that is adopted. Neither definition is dispositive.

V. U.S. PATENT NO. 7,388,511

A. Overview of the '511 Patent

The '511 patent is entitled "System for Remote Control of Identical Devices." (JX-0002 at (54).). The '511 patent is based on PCT Application No. PCT/IB02/04604, filed on October 31, 2002, and claims priority to European Patent Application No. 01204612, filed on November 29, 2001. (*Id.* at (86), (22), (30).). The '511 patent issued on June 17, 2008 and names Frank Amand as the sole inventor. (*Id.* at (45), (75).). Roku owns by assignment all right, title and interest in and to the '511 patent. (*See* Compl. at ¶ 74, Ex. 4.).

The '511 patent is generally directed to a system that allows the remote control signal to operate on only the intended device by use of a coding device that adds a device identifier to the user command. (Compl. at ¶ 76; *see also* JX-0002 at Abstract.). When the controllable devices receive a control signal, each device examines the device identifier in the control signal to determine if the command is addressed to it, and will respond to the command only if the identifier matches its own identifier. (JX-0002 at 3:40-53.).

1. Asserted Claim

As noted above, at issue in this Investigation is independent claim 5 of the '511 patent, which is reproduced below.

5. A method for remote control of at least two like controllable devices, the method comprising: a) with a remote control device, inputting a user-specified command for controlling the controllable devices; and transmitting the user-specified command; b) with a coding device, receiving the user-specified command from the remote control device; adding to the user-specified command a device identifier for identification of at least one of the controllable devices; transmitting the device identifier and the user-specified command in combination; c) with one of the like controllable devices, receiving the device identifier and the user-specified command in combination; extracting the

device identifier; comparing said extracted device identifier with a further device identifier for identification of the controllable device; refraining from further operation with the received user-specified command if said identifiers do not match; and supplying the user-specified command if said identifiers do match; wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, and wherein the step of transmitting the user specified command further includes: transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected.

(JX-0002 at cl. 5.).

2. Claim Construction

Table No. 9: Constructions of Disputed Claim Terms¹⁷

Claim Term(s)	Adopted Construction
“A method for remote control of at least two like controllable devices, the method comprising” (claim 5)	Except for the phrase “at least two like controllable devices,” the preamble is not limiting. (<i>Markman</i> Order I at 4-6.).
“like controllable devices” (claim 5)	Two or more devices which can be controlled by the same signal emitted from a remote control. However, the devices need not be identical. (<i>Markman</i> Order I at 6-7.).
“c) with one of the like controllable devices, receiving the device identifier and the user-specified command in combination; extracting the device identifier; comparing said extracted device identifier with a further device identifier for identification of the controllable device; refraining from further operation with the received user-specified command if said identifiers do not match; and supplying the user-specified command if said identifiers do match”	Step c) is a required step of the claim. (<i>Markman</i> Order I at 8-9.).

¹⁷ The Parties did not agree on any claim terms for the '511 patent. (*See Markman* Order I at 4.).

Claim Term(s)	Adopted Construction
(claim 5)	
“wherein the step of transmitting the user specified command further includes: transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected” (claim 5)	The claim is indefinite under 35 U.S.C. § 112. (<i>Markman</i> Order I at 9-13.).
“wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable” (claim 5)	The remote control device and the coding device are not the same device. The remote control device and the coding device are capable of being connected and disconnected. “connected” means “having a link” “disconnected” means “such link is broken” (<i>Markman</i> Order I at 13-15.).
“transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected” (claim 5)	When the remote control device and the coding device are disconnected, the user-specified command is transmitted directly from the remote control device to controllable devices. (<i>Markman</i> Order I at 15-16.).

B. Invalidity

1. Legal Standard

a) 35 U.S.C. § 112 (Indefiniteness)

A patent specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112, ¶ 2. Previously, the Federal Circuit held that a patent claim is not indefinite “so

long as the claim is amenable to construction, and the claim, as construed, is not insolubly ambiguous.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S.Ct. 2120, 2124 (2014). More recently, the U.S. Supreme Court determined that this standard lacks precision. *Id.* at 2130. Instead, the Supreme Court held:

[W]e read § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable. The standard we adopt accords with opinions of this Court stating that “the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter.”

Id. at 2129 (citations omitted).

A party seeking to invalidate a patent claim must do so by clear and convincing evidence. *See, e.g., Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (citing *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375 (Fed. Cir. 1986)).

2. Claim 5 of the ’511 Patent is Invalid as Indefinite

In *Markman* Order I, the term “wherein the step of transmitting the user specified command further includes: transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected” in claim 5, the sole asserted claim of the ’511 patent, was found to be indefinite under 35 U.S.C. § 112.¹⁸ (*See Markman* Order I at 9-13.).

¹⁸ Pre-AIA law applies because the ’875 patent was filed prior to March 16, 2013. 35 U.S.C. § 100 (note).

Thereafter, Roku and the UEI, Samsung, and LG Respondents jointly moved for summary determination of indefiniteness as to the '511 patent and agreed that as a result of *Markman* Order I, “all remaining issues relating to the '511 Patent are moot (subject to any review of the ALJ’s indefiniteness finding by the Commission).” (*See* Motion Docket No. 1263-028 at 2 (Jan. 18, 2022)).¹⁹ Those parties also “stipulated that . . . no party will present evidence at the hearing regarding the 511 Patent” and stated that “all parties stipulate that the portion of the 511 Respondents Motion for Summary Determination (Mot. No. 1263-015) relating to indefiniteness should be granted.” (*Id.* at 2-3.). An ID issued granting in-part the 511 Respondents’ MSD on the invalidity of claim 5. (*See* Order No. 37 (June 24, 2022)). The ID also granted Roku and the 511 Respondents’ Joint Motion for Reconsideration. (*See id.*).

A patent claim that is indefinite is invalid. 35 U.S.C. § 282(b)(3)(A). Accordingly, this initial determination finds claim 5 of the '511 patent invalid as indefinite.

VI. U.S. PATENT NO. 8,378,875

A. Overview of the '875 Patent

The '875 patent is entitled “Method of Programming a Universal Remote Control.” (JX-0001 at (54)). The '875 patent is based on PCT Application No. PCT/IB2007/050714, filed on March 5, 2007, and claims priority to European Patent Application No. 06111201, filed on March 15, 2006. (*Id.* at (86), (22), (30)). The '875 patent issued on February 19, 2013 and names Michael Walter Paul D’Hoore, Juergen Forscht, and Rogier Louis Jacques Willem Thissen as the inventors. (*Id.* at (45), (75)). Roku owns by assignment all right, title, and

¹⁹ The 511 Respondents initially filed a motion for summary determination regarding the invalidity of claim 5 (“511 Respondents’ MSD”) on November 22, 2021. (Motion Docket No. 1263-015.). The joint submission filed on January 18, 2022 was a motion for reconsideration of the 511 Respondents’ MSD (“Joint Motion for Reconsideration”). (Motion Docket No. 1263-028.).

interest in and to the '875 patent. (*See* Compl. at ¶ 68, Ex. 3.).

The '875 patent is generally directed to an improved universal remote control and method of setting up a universal remote control. (*See* Compl. at ¶ 71; JX-0001 at Abstract.). The improved method includes the steps of entering a configuration mode, accepting an identifier entry, and scanning through remote control code-sets. (*See* JX-0001 at 2:51-54.). The step of scanning comprises: in case that the identifier entry is a brand-identifier, iterating through the remote control code sets corresponding to the brand and testing the remote control code-sets, and in case that the identifier-entry is a code-set-identifier, testing the remote control code-set corresponding to the code-set-identifier. (*See id.* at 2:54-60.).

1. Asserted Claims

As noted above, at issue in this Investigation are claims 1-5, 8-10, and 14 of the '875 patent. Claims 1 and 14 are independent claims and claims 2-4 and 8-10 depend from claim 1. Those claims are reproduced below.

1. A method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter, the method comprising the steps of: entering, via the keyboard and processor, a configuration mode; accepting, via the keyboard and processor, an identifier-entry; and scanning, via the processor and memory, through remote control code-sets in a database stored in the memory of the Remote Control, wherein the step of scanning comprises: in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating, via the processor and memory, through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or more specific control code functions of a corresponding remote control code-set, and in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set.
2. The method according to claim 1, wherein the iteration through remote control code-sets corresponding to the brand continues (i) until a user approval of a

remote control code-set is entered, via the keyboard, or (ii) until all the remote control code-sets corresponding to the brand have been tested.

3. The method according to claim 1, further comprising the step of checking, via the processor, memory, and keyboard, for user approval of a remote control code-set and installing, via the processor and memory, the user approved remote control code-set for use by the Remote Control.

4. The method according to claim 1, wherein the step of testing a remote control code-set comprises the following steps: sending, via the transmitter, a remote control signal of the remote control code-set; checking, via the processor, memory, and keyboard, for a user reaction; and in case of a user reaction, enabling, via the processor, memory, and transmitter, to test keys of the Remote Control for the remote control code-set.

5. The method according to claim 1, further comprising the step of accepting, via the keyboard and processor, a device type entry.

8. The method according to claim 1, wherein a numbering convention is used to distinguish between brand-identifiers and code-set-identifiers.

9. The method according to claim 1, wherein the identifier-entry is a “wild card” code, and upon detecting, via the processor and keyboard, that the “wild card” code is entered, scanning further comprises iterating through all code sets for at least a device type.

10. A non-transitory computer-readable medium embodied with a computer program that comprises computer program code executable by a processor to perform the steps of setting up a Remote Control of claim 1.

14. Remote Control comprising: means for entering a configuration mode; means for accepting an identifier-entry; and means for scanning through remote control code-sets in a database stored in a memory of the Remote Control wherein the means for scanning are adapted for: in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending to a Consumer Electronic device for a given iteration, one of more specific control code functions of a corresponding remote control code-set; and in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set.

(JX-0001 at cls. 1-5, 8-10, 14.).

2. Claim Construction

Table No. 10: Constructions of Agreed Upon Claim Terms

Claim Term(s)	Adopted Construction
<p>“though” in the phrases “scanning, via the processor and memory, though remote control code-sets” (claims 1, 10, 11) and “scanning though remote control code-sets” (claim 14)</p>	<p>Through (<i>Markman</i> Order I at 4.).</p>
<p>“in case that the identifier-entry is a brand-identifier . . . and in case that the identifier-entry is a code-set-identifier” (claims 1, 10, 14)</p>	<p>Must be capable of performing both/either conditional step as opposed to a system/method that could only perform one of the two conditional steps (<i>Markman</i> Order I at 4.).</p>
<p>“means for entering a configuration mode” (claim 14)</p>	<p>This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: entering a configuration mode Structure: keyboard 40 as shown in Fig. 7 and as described at 9:7-8 and 6:7-11 of the '875 patent, and equivalents thereof. (<i>Markman</i> Order I at 4.).</p>

Table No. 11: Constructions of Disputed Claim Terms

Claim Term(s)	Adopted Construction
<p>“a configuration mode . . . accepting . . . scanning” (claims 1, 10, 14) / “a configuration mode . . . scanning . . . testing . . . replacing . . . combining” (claim 11)</p>	<p>entering a “configuration mode,” “accepting an identifier entry,” and “scanning” through remote control code-sets entering a “configuration” mode, “scanning,” “testing,” “replacing” and “combining” (<i>Markman</i> Order II at 1-3.).</p>

Claim Term(s)	Adopted Construction
“identifier-entry” (claims 1, 9, 10, 14)	entry of an identifier (<i>Markman</i> Order II at 3-4.).
“testing . . . by sending, via the transmitter, to a Consumer Electronic device [] one or more specific control code functions” / “testing . . . by sending, via the transmitter, to the Consumer Electronic device [] one or more specific control code functions” (claims 1, 10, 14)	testing . . . by sending one or more specific control code functions to a Consumer Electronics device via the transmitter testing . . . by sending one or more specific control code functions to the Consumer Electronics device via the transmitter (<i>Markman</i> Order II at 4-6.).
“means for accepting an identifier entry” (claim 14)	This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: accepting an identifier-entry Structure: a numerical or SMS keyboard (<i>Markman</i> Order II at 6-9.).
“means for scanning through remote control code-sets” (claim 14)	This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: scanning through remote control code-sets Structure: processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional) (<i>Markman</i> Order II at 9-13.).

B. Direct Infringement

1. Legal Standard: Literal Infringement

“Determination of infringement is a two-step process which consists of determining the scope of the asserted claim (claim construction) and then comparing the accused product . . . to the claim as construed.” *Certain Sucralose, Sweeteners Containing Sucralose, and Related Intermediate Compounds Thereof*, Inv. No. 337-TA-604, Comm’n Opinion at 36 (U.S.I.T.C.,

April 28, 2009) (citing *Litton Sys., Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1454 (Fed. Cir. 1998)).

An accused device literally infringes a patent claim if it contains each limitation recited in the claim exactly. *Litton*, 140 F.3d at 1454. Each patent claim element or limitation is considered material and essential. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991). In a Section 337 investigation, the complainant bears the burden of proving infringement of the asserted patent claims by a preponderance of the evidence. *Enercon GmbH v. Int’l Trade Comm’n*, 151 F.3d 1376, 1384 (Fed. Cir. 1998). This standard “requires proving that infringement was more likely than not to have occurred.” *Warner-Lambert Co. v. Teva Pharm. USA, Inc.*, 418 F.3d 1326, 1341 n. 15 (Fed. Cir. 2005). If any claim limitation is absent, there is no literal infringement of that claim as a matter of law. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000).

2. Overview of the Accused Products²⁰

a) OFA Streamer Remote (URC 7935)

UEI confirmed that it manufactures, sells, and imports a universal remote control called the OFA Streamer Remote, which is also known as the URC 7935. (JX-0807C (UEI’s 7th Suppl. Resp. to 1st Interrog.) at 12-33, 118-19.). Roku presented evidence, including testimony from its expert, Dr. Ravin Balakrishnan, that the URC 7935 includes a Maxim MAXQ610 microprocessor with memory and two IR LED transmitters.²¹ (JX-0553C (URC 7935

²⁰ Respondents did not squarely rebut Roku’s characterizations of the Representative Accused Products. (See RPB. 29-31; RRB. at 26-29.).

²¹ When he testified during the Hearing on January 24-26, 2022, Dr. Ravin Balakrishnan was a Professor at the University of Toronto in the Department of Computer Science. (Tr. (Balakrishnan) at 166:5-9.). Roku identified Dr. Balakrishnan as an expert witness to testify about matters relating to infringement, technical prong of domestic industry, and validity of the ’875 patent. (CPSt. at 2.).

schematic); JX-0049 (URC 7935 Teardown Images); JX-0050 (MAXQ610 Datasheet); Tr. (Balakrishnan) at 186:10-187:1; Tr. (Houh) at 770:6-771:8.). As shown in the user manual, the URC 7935 remote can be set up to control a TV, a streamer/digital media box, and an audio receiver or sound bar using IR signals. (JX-0048 (URC 7935 User Manual).). The user manual also explains that there are two (2) ways relevant to the '875 patent that the remote can be set up to control those devices: SimpleSet and Setup by Code. (*Id.*; Tr. (Balakrishnan) at 179:6-11; CDX-0003C.0009-11.).

With respect to SimpleSet, the user manual discloses that the user enters into a programming, or configuration, mode by pressing a combination of buttons corresponding to a device type. (JX-0048.0002.). The user then presses and holds a button corresponding to a brand. (*Id.*). Every three (3) seconds, the remote transmits one of the IR codes corresponding to the chosen brand. (*Id.*). When the device reacts (e.g., by turning off), the user releases the button, and that code set is stored. (*Id.*; Tr. (Balakrishnan) at 179:12-180:19; CDX-0003C.0010.).

For Setup by Code, the user again enters into a programming, or configuration, mode by pressing the same combination of buttons corresponding to a device type as in SimpleSet. (JX-0048.0003.). The user then enters a five-digit code listed in the user manual for a code-set associated with the brand of device. (*Id.*). The code-set is tested by pressing a button (e.g., the power button) to see if the device reacts. (*Id.*). If it does, the remote is ready to use. If not, the user repeats these steps using the next code listed for the brand of device. (*Id.*; Tr. (Balakrishnan) at 180:20-181:24; CDX-0003C.0011.).

b) Charter Spectrum RF4CE Remote (URC 1160)

Mr. Haughawout, Senior Vice President of Product Development at UEI, testified that

UEI manufactures, sells to Charter, and imports into the United States a universal remote control called the Charter Spectrum RF4CE Remote, also known as the URC 1160.²² (JX-0551C (Haughawout Dep. Tr.) at 66:2-15.). Charter also confirmed that it imports this remote into the United States, as discussed above in Section III (Jurisdiction and Importation), and provides the remote to its cable customers. (JX-0796C (Charter's 2nd Suppl. Resp. to Roku's 1st Interrog.) at 27-28.).

The URC 1160 includes a Qorvo GP565 or a Qorvo UE878 microprocessor with memory and an IR LED transmitter. (JX-0551C at (Haughawout Dep. Tr.) at 72:6-73:18; Tr. (Balakrishnan) at 229:18-230:4; Tr. (Houh) at 770:6-771:11; JX-0615C (Product Specification rev. 3.2) at 20-22.). The URC 1160 can be set up to control a TV and an audio receiver using IR. (JX-0051 (SR-002-R Users Guide);²³ JX-0557 (URC 1160 User Guide).). The URC 1160 manuals explain that there are at least two (2) ways that the remote can be set up to control a TV: (i) Setup for Popular TV Brands; and (ii) Direct Code Entry. (*Id.*; Tr. (Balakrishnan) at 226:2-9; CDX-0003C.0034-35.).

For Setup for Popular TV Brands, the user enters into a programming, or configuration, mode by pressing and holding both "Menu" and "OK" buttons until the input light blinks twice. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide).). Next, the user presses and releases the "TV Power" key. (*Id.*). The user then presses and holds a button

²² When he testified during the Hearing on January 25, 2022, Mr. Joseph Lee Haughawout was Senior Vice President of Product Development at Universal Electronics Inc. (Tr. (Haughawout) at 442:5-10.). Respondents identified Mr. Haughawout as a fact witness to testify about matters relating to the operation of UEI's products, and the operation of prior art such as the RCA RCR815, RCA612, or LeapFROG Baby DVD Remote. (RPSt. at 4.).

²³ JX-0051 (SR-002-R User Guide) is the Charter version of the user guide for the URC-1160. It has the same content as the UEI version, JX-0557 (URC 1160 User Guide), although the formatting is slightly different. (Tr. (Balakrishnan) at 226:21-227:3.).

corresponding to a brand. (*Id.*). Once the user has done this, the remote automatically transmits one of the IR codes corresponding to the chosen brand at regular intervals. (*Id.*). When the device reacts (e.g., by turning off), the user releases the button, and that code-set is stored. (*Id.*; Tr. (Balakrishnan) at 227:4-228:1; CDX-0003C.0034.).

With respect to Direct Code Entry, the user again enters into a programming, or configuration, mode by pressing and holding the same “Menu” and “OK” buttons as in Setup for Popular TV Brands until the input light blinks twice. (JX-0051.0003 (SR-002-R Users Guide); JX-0557.0002 (URC 1160 User Guide).). The user then enters a five-digit code listed in the manual for a code-set associated with the brand of device. (*Id.*). The code-set is tested by pressing a button (e.g., the volume button or the power button) to see if the device reacts. (*Id.*). If the device reacts, the remote is ready to use. If not, the user repeats these steps using the next code listed for the brand of device. (*Id.*; Tr. (Balakrishnan) at 228:2-22; CDX-0003C.0035.).

c) Altice/Charter Pulse RF Remote (URC 2068)

Evidence adduced in this Investigation corroborates that UEI manufactures, sells to Altice and Charter, and imports into the United States a universal remote control called the Pulse RF, which is also known as the URC 2068. (JX-0620C (Pulse RF URC 2068 website information); JX-0551C (Haghighat Dep. Tr.) at 94:6-95:1.). Altice and Charter also import this remote into the United States and provide it to their cable customers. (*See* Section III, *supra.*).

Roku provided evidence that the URC 2068 includes a microprocessor with memory, an IR LED transmitter, and a numerical keyboard. (JX-0551C (Haghighat Dep. Tr.) at 24:2-18; Tr. (Balakrishnan) at 234:3-6; JX-0185C (URC 2068 Specification); Tr. (Houh) at 770:6-771:11; CDX-0003C.0041-44.). The URC 2068 remote can be set up to control a TV using IR. (RX-

0907 (URC 2068 User Manual).). The user manual confirms that there are at least three (3) ways that the remote can be set up: (i) Popular Brands Setup; (ii) Direct Code Entry; and (iii) Code Search. (*Id.*; Tr. (Balakrishnan) at 233:19-234:3; CDX-0003C.0042.).

For Popular Brands Setup, the user enters into a programming, or configuration, mode by pressing and holding the “Setup” button until the LED blinks twice. (RX-0907 (URC 2068 User Manual) at 1.). Next, the user presses and releases the “TV Power” key. The user then presses and holds a button corresponding to a brand. (*Id.*). The remote then automatically transmits one of the IR codes corresponding to the chosen brand at regular intervals. (*Id.*). When the device reacts (e.g., by turning off), the user releases the button, and that code set is stored. (*Id.*; Tr. (Balakrishnan) at 234:7-12, 227:4-228:1; CDX-0003C.0042.).

With respect to Direct Code Entry, the user enters into a configuration mode by pressing and holding the same “Setup” button as in Popular Brands Setup until the LED blinks twice. (RX-0907 (URC 2068 User Manual) at 2.). The user then enters a four-digit code listed in the manual for a code-set associated with the brand of device. (*Id.*). The code-set is tested by pressing a button (e.g., the power button) to see if the device reacts. (*Id.*). If it does, the remote is ready to use. If not, the user repeats these steps using the next code listed. (*Id.*; Tr. (Balakrishnan) at 234:13-15, 228:2-22; CDX-0003C.0043.).

For Code Search, the user enters into a configuration mode by pressing and holding the same “Setup” button as used in either Popular Brands Setup or Direct Code Entry until the LED blinks twice. (RX-0907 (URC 2068 User Manual) at 2.). The user then presses and holds the “OK/SELECT” key, which scans and iterates through all the code-sets for a TV of any brand. (*Id.*). When the TV power turns off, the user releases the “OK/SELECT” key. (*Id.*). At that point, the code set is stored. (*Id.*; Tr. (Balakrishnan) at 236:12-25; CDX-0003C.0044.).

d) WOW Experience Remote (URC 2135)

UEI manufactures, sells to WOW, and imports into the United States a universal remote called the WOW Experience Remote, which is also known as the URC 2135. (JX-0812 (WOW's 2nd Suppl. Responses to Roku's 1st Interrogatories (Oct. 9, 2021)) at 11.). WOW also imports this remote into the United States and provides it to its customers. (*See* Section III, *supra.*).

The URC 2135 includes a microprocessor with memory, an IR LED transmitter, and a numerical keyboard. (JX-0551C (Haughawout Dep. Tr.) at 24:2-18; Tr. (Houh) at 770:6-771:11; JX-0187C (Product Spec. Rev. 1.9) at 10-11; Tr. (Balakrishnan) at 240:21-23; CDX-0003C.0046-49.). The URC 2135 remote can be set up to control a TV and an audio receiver using IR. (JX-0056 (URC 2135 manual).). There are at least three (3) ways that the remote can be set up: (i) Popular Brands Setup; (ii) Direct Code Entry; (iii) and Code Search. (*Id.*; Tr. (Balakrishnan) at 240:9-15.).

For Popular Brands Setup, the user enters into a programming, or configuration, mode by pressing the "Mute" and "OK" buttons simultaneously until the Power key blinks twice. (JX-0056.0002 (URC 2135 manual).). Next, the user presses a button corresponding to a device type (e.g., pressing "A" for TV or "B" for Audio). The user then presses and holds a button corresponding to a brand. (*Id.*). The remote then automatically transmits one of the IR codes corresponding to the chosen brand at regular intervals. (*Id.*). When the device reacts (e.g., by turning off), the user releases the button, and that code set is stored. (*Id.*; Tr. (Balakrishnan) at 240:24-241:20; CDX-0003C.0047.).

For Direct Code Entry, the user enters into a configuration mode by pressing and holding the same "Mute" and "OK" buttons as used in Popular Brands Setup until the Power key blinks

twice. (JX-0056.0002.). The user then enters a four-digit code listed in the manual for a code-set associated with the brand and type of device. (*Id.*). The code-set is tested by pressing a button (e.g., the power button) to see if the device reacts. (*Id.*). If so, the remote is ready to use. If not, the user repeats these steps using the next code listed for the brand and type of device. (*Id.*; Tr. (Balakrishnan) at 241:21-242:14; CDX-0003C.0048.).

For Code Search, the user enters into a configuration mode by pressing and holding the same “Mute” and “OK” buttons as in either Popular Brands Setup or Direct Code Entry until the Power key blinks twice. (JX-0056.0003 (URC 2135 manual).). Next, the user presses a button corresponding to a device type. Then, the user presses and holds the “OK” key, which, scans and iterates through all the code-sets for either a TV or audio device. (*Id.*). When the TV or audio device turns off, the user releases the “OK” key. Then, that code-set is stored. (*Id.*; Tr. (Balakrishnan) at 242:15-243:6; CDX-0003C.0049.).

3. Roku Failed to Show the Remotes Identified Above Are Representative of the Other Accused Remotes

Roku’s expert, Dr. Balakrishnan, identified over 20 remote controls that allegedly infringe one or more claims of the ’875 patent. (Tr. (Balakrishnan) at 306:2-307:13; RDX-0027C.0007.). He provided evidence for only four (4) of those remote controls, i.e., the Representative Accused Products. (*Id.*; Tr. (Houh) at 642:2-643:3; RDX-0001.0015.). For the remaining 875 Accused Products, i.e., the “represented products,” Dr. Balakrishnan alleged that they are represented by the Representative Accused Products. (*Id.*). However, Roku did not cite a single piece of evidence or documentation supporting this argument. (CBr. at 45-48.). For example, Roku does not cite a single user guide, schematic, or piece of source code regarding the so-called “represented products.” (*Id.*).

Dr. Balakrishnan acknowledged that “there are clearly some differences” and that some of the remotes “have sections [of source code] that are commented out or sections that are executed only in particular conditions.” (Tr. (Balakrishnan) at 249:19-22.). Dr. Balakrishnan also acknowledged that in the so-called “represented remotes”, the “particular keypresses were sometimes different.” (*Id.* at 246:6-19.). Dr. Balakrishnan only offered conclusions that the documentation “showed very *similar* ways in which the user would set up the remote control...,” that the steps were “very, very *similar*,” and “logical flow was sufficiently *similar*.” (*Id.* at 246:6-19, 249:22-24 (emphases added); *see also* Tr. (Houh) at 642:21-643:3.).

Complainants have the burden of proof to show infringement for each accused product. *Certain LED Lighting Devices* (“*Certain LED Lighting Devices*”), Inv. No. 337-TA-1081, Comm. Op. at 10 (July 23, 2019) (citing *Medtronic, Inc. v. Mirowski Fam. Ventures, LLC*, 571 U.S. 191, 199 (2014)). In *Certain LED Lighting Devices*, the Commission reversed the ID’s finding that the infringement analysis of representative products should apply to other products, noting that the expert testimony was “conclusory and insufficient to establish representativeness” because it makes “the bare assertion” but “provides no reason or supporting evidence why the products are representative.” *Id.* at 8-11, 14-15 (noting “he cites no evidentiary basis for his conclusion that the 42 accused products all operate in a similar manner, and the Commission declines to credit such unsupported testimony”).

The Commission further emphasized that when the expert testified that the “products all worked in essentially the same way as far as the ’399 Patent was concerned . . . the ‘essentially’ language concedes that there are differences that [the expert] fails to address” and again stressed that the expert “does not provide evidentiary support for his conclusion that the products are ‘essentially’ the same.” *Id.* at 13. The Commission also noted deficiencies with the word

“similar” and that “Complainants have the burden to show that the Represented Products infringe, which is not satisfied by showing that the Represented Products may have structures or functionality that are merely ‘similar’ to products that infringe.” *Id.* at 15.

Like the deficient showing in *Certain LED Lighting Devices*, Dr. Balakrishnan: (i) provided no evidentiary support for his opinions on representativeness; (ii) recognized there are differences between the “representative products” and the allegedly “represented products,” but offers no evidence, reasoning, or explanation as to why the differences are insignificant; and (iii) uses the same language (“similar”) that the Commission has held actually concedes there are product differences that must be addressed with evidence. Roku’s arguments that the “set-up procedures are substantially the same” and the source code is “substantially similar” (CBr. at 46, 47) parallel the statements in *Certain LED Lighting Devices*, which the Commission rejected, in the absence of more analysis and evidence.

For at least these reasons, Roku failed to show the four (4) Representative Accused Products are in fact representative of the other Accused Products.

4. Analysis

a) Claim 1

- i. [I(pre)]: “A method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter, the method comprising the steps of”*

OFA Streamer Remote (URC 7935).

To the extent the preamble is limiting, Roku presented, *inter alia*, tear-down photographs, schematics, specifications, bills of material, and a Maxim datasheet that the URC 7935 includes a keyboard, a Maxim MAXQ610 processor which contains memory, and two IR transmitters. (JX-0553C (URC 7935 schematic); JX-0049 (URC 7935 Teardown Images); JX-0050

(MAXQ610 Datasheet); Tr. (Balakrishnan) at 186:10-187:1; CDX-0003C.0013.).

Respondents did not dispute that these limitations are present. (Tr. (Houh) at 770:6-771:11; *see also* RPBr. at 8-13; RRBr. at 6-8.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For the foregoing reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets the preamble.

Charter Spectrum RF4CE Remote (URC 1160).

To the extent the preamble is limiting, Roku presented, *inter alia*, evidence that the URC 1160 includes a keyboard, a Qorvo GP565 or a Qorvo UE878 processor which contains memory, and an IR LED transmitter. (JX-0551C (Haughawout Dep. Tr.) at 72:6-73:18; Tr. (Balakrishnan) at 229:10-230:4.).

Respondents did not dispute that these limitations are present. (Tr. (Houh) at 770:6-771:11; *see also* RPBr. at 16-20; RRBr. at 16-22.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For these reasons, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the preamble.

ii. [1(a)]: “entering, via the keyboard and processor, a configuration mode”

OFA Streamer Remote (URC 7935).

Roku presented evidence demonstrating that when the “TV Power” and “BACK” keys on the keyboard are held down, the processor causes the remote control to enter a configuration mode for controlling a TV. (JX-0048.0002; Tr. (Balakrishnan) at 188:4-9, 188:18-24; CDX-0003C.0014.). When other keys are held down (e.g., “STREAMER POWER” and “HOME,” or

“VOLUME+” and “VOLUME-”), the remote control enters a configuration mode for controlling a streamer box or an audio receiver/sound bar. (*Id.*).

Respondents argued in their Pre-Hearing Brief, but not during the Hearing or in their Post-Hearing Reply Brief, that limitations 1(a), 1(b), and 1(c)(2) are not satisfied because testing in the Setup by Code procedure is performed after the configuration mode is exited, i.e., not “within that mode,” as Respondents proposed during claim construction. (RPBr. at 8-9; RRBr. at 6-8.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Moreover, Respondents’ claim construction proposal that the configuration mode must include the accepting and scanning steps “within that mode” was rejected. (*See Markman* Order II at 1-3.). Thus, nothing in the adopted construction of claim takes this testing out of the scope of the claim.

Accordingly, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

Roku presented evidence that when the “MENU” and “OK” keys on the keyboard are held down until the input key blinks twice, the remote control enters a configuration mode. (JX-0051.0002-3 (SR-002-R Users Guide); JX-0557.0001-2 (URC 1160 User Guide); Tr. (Balakrishnan) at 230:6-11.).

Respondents argued that the URC 1160 has two separate configuration modes—one for Popular Brands, and another for Direct Code entry—because, in the Popular Brands procedure, the TV Power key must be pressed after the input key blinks twice. (Tr. (Houh) at 646:20-647:20.). For that reason, Respondents contended that the URC 1160 does not satisfy this limitation. (*Id.*). However, as Dr. Balakrishnan explained, there is only one configuration mode

for the URC 1160, and it is accessed for both set-up methods in the same way: by holding down the “MENU” and “OK” keys until the input key blinks twice. (Tr. (Balakrishnan) at 231:6-16.). He testified that pressing the TV Power key in the Popular Brands procedure is simply an additional step that does not avoid infringement. (*Id.*). In other words, once the remote enters the configuration mode, i.e., after the input key blinks twice, the user has the choice to invoke either Popular Brands (by pressing the TV Power key and then pressing and holding a brand key) or Direct Code Entry (by entering a code-set), without having to go back and re-enter configuration mode. (*Id.* at 331:1-13 (testimony regarding the analogous URC 2068), 234:7-15 (Popular Brands and Direct Code set-up methods for URC 2068 substantively the same as URC 1160).).

Respondents argued in their Pre-Hearing Brief, but not during the Hearing or in their Post-Hearing Reply Brief, that limitations 1(a), 1(b), and 1(c)(2) are not satisfied because they do not occur within the same configuration mode. (RPBr. at 17-18; RRBr. at 6-8.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1. Moreover, this argument is the same argument Respondents raised for the URC 7935, which is precluded by the adopted claim construction.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the preamble.

iii. [1(b)]: “accepting, via the keyboard and processor, an identifier-entry”

OFA Streamer Remote (URC 7935).

Roku produced evidence that the URC 7935 accepts identifier-entries using the keyboard and processor. For example, to set up the remote control to control a Samsung TV, a “Replay”

button entry is accepted as an identifier-entry. (JX-0048.0002; Tr. (Balakrishnan) at 188:4-17, 188:25-189:6; CDX-0003C.0014.). In another example, to set up the remote control to control a Zenith TV, a five-digit code entry is accepted as an identifier-entry. (*Id.*).

Respondents asserted in their Pre-Hearing Brief, but not during the Hearing or in their Post-Hearing Reply Brief, that the Accused Products do not satisfy the “identifier-entry” limitation under their proposed claim construction because the brand-identifier and code-set identifier do not have the same format such that a code-set-identifier appears to be a brand-identifier. (RPBr. at 9-10; Tr. (Balakrishnan) at 189:18-21.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Additionally, Respondents’ claim construction proposal that “identifier-entry” must include a brand-identifier and code-set identifier having the same format was rejected. (*See* Order No. 32 at 3-4 (Jan. 21, 2022).). Under the adopted construction, claim 1 does not require the brand- and code-set-identifiers to have the same format.

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

Roku presented evidence that URC 1160 accepts identifier-entries using the keyboard and processor. For example, to set up the remote control to control an Insignia TV, a “1” button entry is accepted as an identifier-entry. (JX-0051 (SR-002-R Users Guide); Tr. (Balakrishnan) at 227:6-228:22; CDX-0003C.0034-35.). In another example, to set up the remote control to control an Akai TV, a five-digit code entry is accepted as an identifier-entry. (JX-0557 (URC 1160 User Guide); Tr. (Balakrishnan) at 230:12-17.).

In their Pre-Hearing Brief, Respondents lodged the same non-infringement argument as

they did for the URC 7935, i.e., that the brand-identifiers do not have the same format as the code-set-identifiers. (RPBr. at 18; RRB. at 16-22.). Like Respondents' non-infringement argument regarding the URC 7935, Respondents did not raise this argument during the Hearing or in their Post-Hearing Reply Brief. (Tr. (Houh) at 645:2-11; RDX-0001C.0018.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Furthermore, as noted above in the discussion with respect to the URC 7935, the adopted claim construction for the term "identifier-entry" precludes Respondents from making this argument.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

- iv. [I(c)]: "scanning, via the processor and memory, through remote control code-sets in a database stored in the memory of the Remote Control, wherein the step of scanning comprises"*

OFA Streamer Remote (URC 7935).

Roku elicited evidence that the URC 7935 scans through remote control code-sets stored in a database in the remote using the processor and memory in at least two (2) ways: (i) the SimpleSet procedure; and (ii) the Setup by Code procedure. (JX-0048.0002-3; Tr. (Balakrishnan) at 179:6-11; CDX-0003C.0010-11.).

Respondents did not dispute this. (See RPBr. at 8-13; RRB. at 6-8.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For the foregoing reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

Roku presented evidence that the URC 1160 scans through remote control code-sets stored in a database in the remote using the processor and memory in at least two (2) ways: (i) the Setup for Popular TV brands procedure; and (ii) the Direct Code Entry procedure. (JX-0051.0002-3 (SR-002-R Users Guide); JX-0557.0001-2 (URC 1160 User Guide); Tr. (Balakrishnan) at 230:18-231:5.).

Respondents did not dispute that this limitation is present in the URC 1160. (Tr. (Houh) at 645:2-11; RDX-0001.0018; *see also* RPBr. at 16-20; RRBr. at 16-22.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

- v. ***[I(c)(1)]: “in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating, via the processor and memory, through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or more specific control code functions of a corresponding remote control code-set”***

OFA Streamer Remote (URC 7935).

As explained in the user manual, and confirmed by Dr. Balakrishnan’s testimony, in the “SimpleSet” setup procedure for a TV, the identifier-entry identifies a brand and the remote control iterates through code-sets associated with that brand. (JX-0048.0002; Tr. (Balakrishnan) at 191:13-192:4; CDX-0003C.0019.). The remote control tests each code-set for the identified brand in succession, sending the “Power” code for each code-set every three (3) seconds, until the TV reacts by turning off. (*Id.*).

Respondents asserted in their Pre-Hearing Brief, but not during the Hearing or in their Post-Hearing Reply Brief, that the Accused Products do not satisfy the “brand-identifier that

identifies a brand” limitation. (RPBr. at 10-12; RRBr. at 6-8.). Respondents argued, for example, that “the brand identifiers do not identify a brand because the brand names are only written in the comments and therefore are not compiled into the executable code.” (*Id.* at 11; Tr. (Balakrishnan) at 192:20-23.). Any argument on this issue is deemed waived under Ground Rule 10.1.

Moreover, as Roku pointed out, nothing in claim 1 requires the brand name to be found in the compiled executable code. (Tr. (Balakrishnan) at 192:25-193:5.). Rather, the brand-identifier is an identifier entry which is “accept[ed] . . . via the keyboard and the processor.” (*Id.* at 192:5-19.). This is simply the key press that corresponds to a particular brand. (*Id.*).

For these reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

As explained in the user manuals, during the “Setup for Popular TV Brands” procedure, the identifier-entry corresponds to a brand-identifier (e.g., the “1” button corresponds to Insignia). (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); *see also* Tr. (Balakrishnan) at 227:4-228:1, 230:18-23; CDX-0003C.0034.). In that case, the remote control identifies an appropriate code-set by iterating through code-sets for the selected brand and testing a current code-set by transmitting a control function. (*Id.*). The remote control tests code-sets for the identified brand in succession, sending the “Power” key for each code-set until the TV reacts by turning off. (*Id.*).

In their Pre-Hearing Brief, Respondents made the same non-infringement argument as they did for the URC 7935, i.e., that the accused brand-identifiers do not identify a brand because the brand names are only written in the comments and are not compiled into executable code.

(RPBr. at 19.). Like Respondents’ non-infringement argument regarding the URC 7935, Respondents did not raise this argument during the Hearing or in their Post-Hearing Reply Brief. (See RRBBr. at 16-22.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Furthermore, as noted above in the discussion with respect to the URC 7935, claim 1 does not require the brand name to be found in the compiled executable code. (Tr. (Balakrishnan) at 192:25-193:5.).

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

- vi. ***[1(c)(2)]: “in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set identifier by sending, via the transmitter, to the Consumer Electronic device one or more control code functions of the corresponding single remote control code-set”***

OFA Streamer Remote (URC 7935).

Roku presented evidence that in the “Setup by Code” setup procedure, the identifier-entry is a code-set identifier that corresponds to a single code-set for a device (e.g., 11565 for a Zenith TV). (JX-0048.0003 (URC 7935 user manual); Tr. (Balakrishnan) at 198:16-199:8; CDX-0003C.0020.). The remote control tests the single code-set identified by the code-set-identifier by transmitting to the consumer electronics device via the IR transmitter a control code for either “Power” or “Mute,” depending on the type of device being controlled. (*Id.*).

There are also code-sets that are “not pointed to by a brand-identifier,” as recited in claim 1. As shown in the user manual, there are ten SimpleSet brand-identifiers (e.g., replay key, power key, home key, back key, etc.) that represent the most popular brands. (JX-0048.0002;

CDX-0003C.0010; Tr. (Balakrishnan) at 199:24-200:7.). As Dr. Balakrishnan explained, this leaves many lesser-known brands with code-sets that can be entered using Setup by Code (e.g., Acer, Aiwa) without a brand-identifier that points to them. (Tr. (Balakrishnan) at 199:24-200:18; JX-0443C.0030-36 (OFA Streamer User Manual with code list).). UEI’s corporate witness, Mr. Haughawout, confirmed that “[t]here are some codes that are stored in the URC 7935 remote that you can’t access using the SimpleSet procedure.” (Tr. (Haughawout) at 470:22-471:8.).

During the Hearing, Dr. Balakrishnan explained how he had looked up the code-set-identifier for one particular TV that was not a top brand, Bang & Olufsen (whose code-set-identifier was “13623,” as shown below in Figure 1). (Tr. (Balakrishnan) at 200:8-18.).

Figure 1: OFA Streamer User Manual Code List

CODELIST			
TV			
TV			
Acer	35561, 21222, 23456	Baird	36462, 33261, 35424, 42213
Acoustic Solutions	22666, 22312, 23456, 15556	Bang & Olufsen	13623
Acronn	26616	Base	22245
ADL	16456	Basic Line	14143, 15556
AEG	25212, 22223, 22312	Bauer	25212
Airis	26616	Bauhn	35526, 35631
Aiwa	44121	Baur	13323
		BBK	24525

(JX-0443C.0030 (OFA Streamer User Manual with code list).).

He then searched for, but did not find, the code-set-identifier “13623” among all the codes of the top brands used in SimpleSet. (*Id.*). He testified that this meant that this code-set-identifier was “not accessible through the brand-identifier method,” i.e., that this was an example

of a “code-set-identifier . . . which is not pointed to by a brand-identifier.” (*Id.*).

Respondents raised two (2) related non-infringement arguments that purportedly show that every code-set is pointed to by a brand identifier. First, Respondents argued that the code list in Figure 1 shows that every code-set-identifier (e.g., “13632”) is pointed to by what they call a brand-identifier (e.g., “Bang & Olufsen”) because the brand names are printed in the manual. (Tr. (Houh) at 654:18-656:5; RDX-0001C.0026.). However, these names printed in a user manual are not the claimed brand-identifiers that are recited in claim 1. The brand name “Bang & Olufsen” is not “accept[ed], via the keyboard and processor” by the remote, as required by limitation 1(b). Moreover, the user cannot use the name “Bang & Olufsen” to access the code-set “13623” via a brand search method, because Bang & Olufsen is not one of the top brands. The code-set “13623” is therefore not “pointed to by a brand-identifier,” as required by the claim. (Tr. (Balakrishnan) at 213:8-214:4.).

Second, Respondents contended that every code-set is pointed to by a brand-identifier in the form of an internal file in the computer code that allegedly identifies the brand of each code-set. (Tr. (Houh) at 652:24-654:3; RDX-0001C.0025.). However, these brand names in the source code do not meet the “brand-identifier” limitation as recited in claim 1 for the same reason as the names in the user manuals do not: (i) because they are not “accept[ed], via the keyboard and processor,” by the remote; and (ii) because the user cannot use them to access these code-sets via a brand search. (Tr. (Balakrishnan) at 213:8-214:4.).

For these reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

Roku provided evidence that in the “Direct Code Entry” setup procedure, the identifier-

entry is a code-set identifier that corresponds to a single code-set (e.g., 11675 for an Akai TV). Roku presented evidence that the remote control tests the single code-set by transmitting a control code for either power or volume to the consumer electronics device. (JX-0051 (SR-002-R Users Guide); JX-0557 (URC 1160 User Guide); Tr. (Balakrishnan) at 228:2-22, 230:24-231:5; CDX-0003C.0035.). Dr. Balakrishnan explained that there are a number of code-sets that can be accessed by Direct Code Entry that are “not pointed to by a brand-identifier” because they cannot be accessed through the brand-identifiers of the top brands available in the Popular Brands method. (Tr. (Balakrishnan) at 199:24-200:12.).

Respondents asserted that the URC 1160 does not satisfy the limitation “a code-set-identifier . . . which is not pointed to by a brand-identifier” for the same reasons as the URC 7935. (RRBr. at 16-22; Tr. (Balakrishnan) at 213:8-214:4.). However, Respondents’ non-infringement arguments are unpersuasive for the same reasons explained above for limitation 1(c)(2) with respect to the URC 7935. (*See* Section VI.B.4(vi).).

For these reasons, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

- b) **Claim 2: “The method according to claim 1, wherein the iteration through remote control code-sets corresponding to the brand continues (i) until a user approval of a remote control code-set is entered, via the keyboard, or (ii) until all the remote control code-sets corresponding to the brand have been tested.”**

OFA Streamer Remote (URC 7935).

Roku presented evidence that in the “SimpleSet” setup procedure, the remote control iterates through code-sets and tests a current code-set by transmitting a control function (e.g., “Power” for a TV). (JX-0048.0002 (URC 7935 manual); Tr. (Balakrishnan) at 215:18-216:6;

CDX-0003C.0022.). As the user manual explains, when the user presses and holds down the button for the selected brand, the remote control tries code-sets for the brand in succession, sending the “Power” key for each code-set every 3 seconds, until the TV reacts by turning off, which indicates that the appropriate code-set has been identified. (*Id.*). As soon as the TV reacts, the user releases the key for the brand to show approval. The iteration will continue until the user releases the key or until all code-sets for the brand have been tested. (*Id.*).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitations of claim 2 are present in the OFA Streamer Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRBr. at 9.).

For the foregoing reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets these claim limitations.

Charter Spectrum RF4CE Remote (URC 1160).

Roku provided evidence that in the “Setup for Popular TV Brands” procedure, the remote control tries code-sets for the identified brand in succession, sending the “Power” key for each code-set until the TV reacts (turns off), indicating that the appropriate code-set has been located and tested. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037.). When the TV turns off, the user releases the key. (*Id.*). The iteration continues until the user releases the key to show approval or until all code-sets have been tested for the brand. (*Id.*).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitations of claim 2 are present in the Charter Spectrum RF4CE Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRBr. at 9.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets these claim limitations.

- c) **Claim 3: “The method according to claim 1, further comprising the step of checking, via the processor, memory, and keyboard, for user approval of a remote control code-set and installing, via the processor and memory, the user approved remote control code-set for use by the Remote Control.”**

OFA Streamer Remote (URC 7935).

Roku presented evidence that in the “SimpleSet” setup procedure for a TV, the remote control tries code-sets for the identified brand in succession, sending the “Power” key for each code-set every 3 seconds, until the TV reacts by turning off, indicating that the appropriate code-set has been identified. (JX-0048.0002; Tr. (Balakrishnan) at 216:11-24; CDX-0003C.0023.). The remote control continually checks for user approval of the code-set via the processor and memory. (*Id.*). The user’s releasing the key, via the keyboard, when the TV turns off, indicates user approval. (*Id.*). The LED then blinks twice in green as a signal that the installation has been completed, via the processor and memory, and that the remote should be able to operate the TV. (*Id.*).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitations of claim 3 are present in the OFA Streamer Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRB. at 9.).

For these reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets these claim limitations.

Charter Spectrum RF4CE Remote (URC 1160).

In the “Setup for Popular TV Brands” procedure, the remote control continually checks

for user approval of the code-set via the processor and memory. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037.). The user's releasing the key, via the keyboard, when the TV turns off, indicates user approval. (*Id.*). The code-set is then installed, via the processor and memory, and the remote is able to operate the TV. (*Id.*).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitations of claim 3 are present in the Charter Spectrum RF4CE Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRBr. at 9.).

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets these claim limitations.

d) Claim 4

- i. [4(pre)]: "The method according to claim 1, wherein the step of testing a remote control code-set comprises the following steps"*

OFA Streamer Remote (URC 7935).

The step of testing a remote control code-set comprises the steps described below. Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 7935 meets the preamble. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets the preamble.

Charter Spectrum RF4CE Remote (URC 1160).

The step of testing a remote control code-set comprises the steps described below. Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 1160

meets the preamble. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the preamble.

ii. [4(a)]: “sending, via the transmitter, a remote control signal of the remote control code-set”

OFA Streamer Remote (URC 7935).

In the “SimpleSet” setup procedure for a TV, the remote control tests code-sets for the identified brand in succession by transmitting the “Power” signal for each code-set every 3 seconds. (JX-0048.0002; Tr. (Balakrishnan) at 217:3-6; CDX-0003C.0024.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 7935 meets this claim limitation. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For the foregoing reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

In the “Setup for Popular TV Brands” procedure, the remote control tries code-sets for the identified brand in succession, sending the “Power” signal for each code-set. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:17-22; CDX-0003C.00037; *see also* discussion of limitations 1(b), 1(c) and 1(c)(1) above for URC 1160.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 1160 meets this claim limitation. (Tr. (Houh) at 645:2-11; RDX-0001C.0018.). Thus, any

argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

iii. [4(b)]: “checking, via the processor, memory, and keyboard, for user reaction”

OFA Streamer Remote (URC 7935).

In the “SimpleSet” setup procedure for a TV, after sending the “Power” signal, the remote control continually checks via the processor, memory, and keyboard to see if the user has reacted by releasing the key. (JX-0048.0002; Tr. (Balakrishnan) at 217:3-6; CDX-0003C.0024.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 7935 meets this claim limitation. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For these reasons, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

In the “Setup for Popular TV Brands” procedure for a TV, after sending the “Power” signal, the remote continually checks via the processor, memory, and keyboard to see if the user has reacted by releasing the key. (JX-0051 (SR-002-R Users Guide); JX-0557 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037; *see also* discussion of limitations 1(b), 1(c) and 1(c)(1) above for URC 1160.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 1160 meets this claim limitation. (Tr. (Houh) at 645:2-11; RDX-0001C.0018.). Thus, any

argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

iv. [4(c)]: “in case of a user reaction, enabling, via the processor, memory, and transmitter, to test keys of the Remote Control for the remote control code-set”

OFA Streamer Remote (URC 7935).

After the user reacts by releasing the key, the user manual encourages the user to test other keys “if you find one or more keys do not work as you expect[.]” (JX-0048.0002; *see also* Tr. (Balakrishnan) at 217:3-19; CDX-0003C.0024.). If the user finds that other keys do not work as expected, the user is directed to resume the set-up procedure, and the remote will resume testing with “the next code in the memory.” (*Id.*).

Respondents argued that Roku is required to show limitation 4(c) for both SimpleSet and Setup by Code. (Tr. (Houh) at 661:9-662:8; RDX-0001.0030.). However, claim 4 has no such requirement. Showing that limitation 4(c) is satisfied by SimpleSet is sufficient to show infringement. (Tr. (Balakrishnan) at 217:20-218:6, 365:13-20.).

Accordingly, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

The user guides demonstrate that after the user releases the brand key to indicate the TV has turned off and the power function works, the user is able to test other keys, such as the volume key. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); *see also* Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037.).

Respondents lodged the same non-infringement arguments for limitation 4(c) as they did for the URC 7935. (Tr. (Houh) at 661:2-7; RDX-0001.0029.). Those non-infringement arguments are not persuasive for the same reasons discussed with respect to the URC 7935. (*See supra.*).

For these reasons, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

- e) **Claim 5: “The method according to claim 1, further comprising the step of accepting, via the keyboard and processor, a device type entry.”**

OFA Streamer Remote (URC 7935).

Roku provided evidence that the user presses certain keys on the keyboard to specify the type of device to be controlled by the remote. As explained in the user guide, to control a TV device type, the user holds down the “TV POWER” and “BACK” keys. (JX-0048.0002-3; *see also* Tr. (Balakrishnan) at 218:7-17; CDX-0003C.0025.). To control a Streamer/Digital Media Box device type, the user holds down “STREAMER POWER” and “HOME” keys. (*Id.*). To control an audio receiver or sound bar device types, the user holds down the “VOLUME+” and “VOLUME-” keys. (*Id.*).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitation of claim 5 is present in the OFA Streamer Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRB. at 9.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets the additional claim limitation recited in claim 5.

Charter Spectrum RF4CE Remote (URC 1160).

Roku presented evidence that in the “Setup for Popular TV Brands,” the “TV POWER” key is accepted as a device type entry. (JX-0051.0002 (SR-002-R Users Guide); JX-0557.0001 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037.). In the “Setup Using Direct Code Entry,” the first digit of the code entered is a device type entry: “1” corresponds to a TV; “2” corresponds to an audio device. (JX-0051.0003; JX-0557.0002; Tr. (Balakrishnan) at 231:17-22; CDX-0003C.0037.).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitation of claim 5 is present in the Charter Spectrum RF4CE Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRB. at 16-22.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the additional claim limitation recited in claim 5. WOW Experience Remote (URC 2135).

Roku proffered evidence that during the “Popular Brands” setup procedure, to set up the remote control to control a TV or an audio device, the A (yellow) key is accepted, via the processor, as a device type entry for a TV, and the B (blue) key is accepted, via the processor, as a device type entry for an audio device. (JX-0056.0002 (2135 User Manual); Tr. (Balakrishnan) at 244:10-20; CDX-0003C.0050.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the additional limitation of claim 5 is present in the URC 2135. (Tr. (Houh) at 645:2-11; RDX-0001.0018.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence

that the WOW Experience Remote meets the additional claim limitation recited in claim 5.

- f) **Claim 8: “The method according to claim 1, wherein a numbering convention is used to distinguish between brand-identifiers and code-set-identifiers.”**

OFA Streamer Remote (URC 7935).

The URC 7935 uses a numbering convention to distinguish brand-identifiers and code-set-identifiers. Brand-identifiers have a one-key-press identifier and code-set-identifiers have a five-key-press identifier. (JX-0048.0002-3; Tr. (Balakrishnan) at 218:21-219:5; CDX-0003C.0026.).

Respondents argued in their Pre-Hearing Brief, but not during the Hearing, that the accused products do not satisfy this limitation because: (1) brand-identifiers and code-set-identifiers are distinguished by a press of a key (for code-set-identifiers) versus a press-and-hold of a key, rather than by a numbering convention; and (2) the URC 7935 does not have a numerical keyboard. (RPBr. at 14.). Any argument on this issue is deemed waived under Ground Rule 10.1.

Nevertheless, as Roku pointed out, a press of a key versus a press-and-hold is simply an additional distinction between brand-identifiers and code-set-identifiers that does not negate the existence of a numbering convention that distinguishes them. One skilled in the art would understand that a numbering convention would include conventions regarding a number of key presses associated with an identifier, for example a one-key-press identifier versus a five-key-press identifier, and does not require a numerical keypad. (Tr. (Balakrishnan) at 218:21-219:5.).

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets the additional claim limitation recited in claim 8.

Charter Spectrum RF4CE Remote (URC 1160).

The URC 1160 uses a numbering convention to distinguish brand-identifiers and code-set-identifiers. In particular, brand-identifiers have a one-digit identifier and code-set-identifiers have a five-digit identifier. (Tr. (Balakrishnan) at 231:23-232:9.).

In their Pre-Hearing Brief, Respondents made the same argument discussed above with respect to the URC 7935 that the two types of identifiers are also distinguished by a press versus a press-and-hold. (RPBr. at 21.). However, Respondents did not raise this argument, or any supporting evidence, during the Hearing. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Moreover, as discussed above with regard to URC 7935, that is simply an additional distinction that does not avoid infringement. (JX-0051 (SR-002-R Users Guide); JX-0557 (URC 1160 User Guide); Tr. (Balakrishnan) at 231:23-232:9; CDX-0003C.0038.).

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the additional claim limitation recited in claim 8.

WOW Experience Remote (URC 2135).

In their Pre-Hearing Brief, Respondents made the same non-infringement arguments discussed above with respect to the URC 1160 and URC 2068. (RPBr. at 29.). However, Respondents did not raise this argument, or any supporting evidence, during the Hearing. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Moreover, for the reasons discussed above with respect to the URC 1160 and URC 2068, Roku has demonstrated by a preponderance of evidence that the WOW Experience Remote meets the additional claim limitation recited in claim 8.

- g) **Claim 9: “The method according to claim 1, wherein the identifier-entry is a “wild card” code, and upon detecting, via the processor and keyboard, that the “wild card” code is entered, scanning further comprises iterating through all code sets for at least a device type.”**

Altice/Charter Pulse RF Remote (URC 2068).

The user manual explains that during the “Code Search” setup procedure for a device type, e.g., a TV, the user presses and holds the “OK/SELECT” key as a “wild card,” which, when detected via the processor and keyboard, causes the remote to scan and iterate through all the code sets for TVs. (RX-0907 (URC 2068 User Manual) at 2.). When the TV turns off, the user releases the key, and the setup is completed. (*Id.*; Tr. (Balakrishnan) at 238:25-239:8; CDX-0003C.45.).

Respondents argued in their Pre-Hearing Brief, but not during the Hearing, that this claim is not met because the wild card code is not accepted in the same configuration mode as the brand-identifier and/or code-set-identifier. (RPBr. at 25.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Altice/Charter Pulse RF Remote meets the additional claim limitations recited in claim 9.

WOW Experience Remote (URC 2135).

During the “Code Search” setup procedure for a device type, e.g., a TV, the user presses and holds the “OK” key as a “wild card,” which, when detected via the processor and keyboard, causes the remote to scan and iterate through all the code-sets for TVs. (JX-0056.0003; Tr. (Balakrishnan) at 244:21-245:11; CDX-0003C.0050.). When the TV turns off, the user releases the “OK” key, and the setup is completed. (*Id.*). The same procedure can be performed to scan and iterate through all code sets for audio devices of any brand. (*Id.*).

In their Pre-Hearing Brief, Respondents made the same non-infringement arguments discussed above with respect to the URC 2068. (RPBr. at 29.). However, Respondents did not raise this argument, or any supporting evidence, during the Hearing. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Moreover, for the reasons discussed above with respect to the URC 2068, Roku has demonstrated by a preponderance of evidence that the WOW Experience Remote meets the additional claim limitations recited in claim 9.

- h) Claim 10: “A non-transitory computer-readable medium embodied with a computer program that comprises computer program code executable by a processor to perform the steps of setting up a Remote Control of claim 1.”**

OFA Streamer Remote (URC 7935).

A skilled artisan would understand that this apparatus claim requires a computer readable medium that contains a computer program that is executable to perform the steps recited in claim 1. (Tr. (Balakrishnan) at 219:8-21.). The URC 7935 has a processor with a memory. (*See* Section IV.B.4 (claim 1), *supra.*). That memory holds a computer program that is executable by the processor to perform all the steps of claim 1 for the same reasons discussed above for claim 1. (CPX-0010C (UEI Source Code) at UEI1263_SC_50000962-1203; Tr. (Balakrishnan) at 219:6-21; CDX-0003C.0027.).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitation of claim 10 is present in the OFA Streamer Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence

that the OFA Streamer Remote meets the additional claim limitation recited in claim 10.

Charter Spectrum RF4CE Remote (URC 1160).

A person of ordinary skill in the art would understand that this apparatus claim requires a computer readable medium that contains a computer program that is executable to perform the steps recited in claim 1. (Tr. (Balakrishnan) at 231:17-22.). The URC 1160 has a processor with a memory. (See Section VI.B.4(a), *supra* (discussion of claim 1)). The memory holds a computer program that is executable by the processor of the URC 1160 to perform all the steps of claim 1 for the same reasons discussed above for claim 1. (CPX-0010 (UEI Source Code) at UEI1263_SC_50000005-198; UEI1263_SC_50000199-550; UEI1263_SC_50001204-1207; UEI1263_SC_50001208-1212; Tr. (Balakrishnan) at 231:17-22.).

Respondents did not dispute during the Hearing or in their Post-Hearing Reply Brief that the additional limitation of claim 10 is present in the Charter Spectrum RF4CE Remote. (Tr. (Houh) at 645:2-11; RDX-0001C.0018; RRBr. at 9.). Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the additional claim limitation recited in claim 10.

i) Claim 14

i. [14(pre)]: “Remote Control comprising”

OFA Streamer Remote (URC 7935).

To the extent the preamble is limiting, the URC 7935 is a remote control. (See, e.g., JX-0048 (7935 User Manual)). Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 7935 meets the preamble. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets the preamble.

Charter Spectrum RF4CE Remote (URC 1160).

To the extent the preamble is limiting, the URC 1160 is a remote control. (JX-0051 (SR-002-R Users Guide); JX-0557 (URC 1160 User Guide)). Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 1160 meets the preamble. Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Accordingly, Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets the preamble.

ii. [14(a)]: “means for entering a configuration mode”

OFA Streamer Remote (URC 7935).

The Parties agreed that limitation 14(a) is a means-plus-function limitation and that the function is “entering a configuration mode.” (Order No. 30 (Jan. 14, 2022) at 4.). The URC 7935 performs this function. For example, when the “TV POWER” and “BACK” keys are pressed simultaneously, the remote performs the function of “entering a configuration mode.” (See Section VI.B.4(a), *supra* (discussion of limitation 1(a)); Tr. (Balakrishnan) at 220:20-25; CDX-0003C.0029.). The Parties also agreed that the corresponding structure is a keyboard. (Order No. 30 (Jan. 14, 2022) at 4.). As discussed above with respect to limitations 1(pre) and 1(a), the URC 7935 performs this function using a keyboard. (JX-0048.0002-3; Tr. (Balakrishnan) at 188:4-9, 188:18-24 221:1-6; CDX-0003C.0014.).

Respondents did not dispute in their Pre-Hearing Brief or during the Hearing that the URC 7935 satisfies limitation 14(a). (Tr. (Houh) at 645:2-11; RDX-0001.0018-19.). Thus, any

argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

For the reasons discussed above, Roku has demonstrated by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

Roku presented evidence that the URC 1160 performs this function. For example, when the “Menu” and “OK” keys are pressed simultaneously, the remote performs the function of “entering a configuration mode.” (See Section VI.B.4(a), *supra* (discussion of claim limitation 1(a)); JX-0051.0002-3 (SR-002-R Users Guide); JX-0557.0001-2 (URC 1160 User Guide); Tr. (Balakrishnan) at 233:1-9.). Roku also demonstrated that the URC 1160 performs this function using a keyboard. (See Section VI.B.4(a), *supra* (discussion of claim elements 1(pre) and 1(a)); Tr. (Balakrishnan) at 233:1-6; CDX-0003C.0039.).

Respondents raised the same non-infringement arguments for claim 1(a) for the URC 1160 and for claim 14(a) for the URC 7935. For the reasons discussed in Section VI.B.4(a) with respect to claim 1(a), Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

iii. [14(b)]: “means for accepting an identifier-entry”

OFA Streamer Remote (URC 7935).

The Parties agreed that limitation 14(b) is a means-plus-function limitation and that the function is “accepting an identifier-entry.” (Order No. 32 (Jan. 21, 2022) at 6-7.). Under the adopted construction, the structure for “means for accepting an identifier entry” requires “a numerical or SMS keyboard.” (*Id.* at 6-9.). It is undisputed that the OFA Streamer Remote does not literally have a “a numerical or SMS keyboard.” (Tr. (Houh) at 663:23-664:9; RDX-

0001.0032; RX-0909; Tr. (Balakrishnan) at 221:10-222:10.). Instead, Dr. Balakrishnan argued that the OFA Streamer Remote's keyboard is an equivalent structure under 35 U.S.C. § 112(6) to an SMS keyboard. (*Id.*).

Dr. Houh testified that an SMS keyboard works almost the exact opposite way as how Dr. Balakrishnan characterizes the OFA Streamer Remote's keyboard. (Tr. (Houh) at 664:6-665:12.). He explained that an SMS keyboard converts the number of presses of a button into a letter or a number (e.g., the number 2 pressed once is A, the number 2 pressed twice is B, the number 2 pressed three times is C, the number 2 pressed four times enters a 2). (*Id.* at 664:18-24.). This allows a person with a number pad to spell out words. (*Id.*) Repeated presses of a button on an SMS keyboard only generates one output character. (*Id.* at 664:24-665:12.).

Dr. Houh explained that the OFA Streamer Remote, on the other hand, treats repeated keypresses as individual entries. (*Id.* at 664:2-6.). For example, if one presses one of the OFA Streamer Remotes' keys four times, the OFA Streamer Remotes generates four keypresses. (*Id.*). By comparison to an SMS keyboard, the OFA Streamer Remote keyboard performs substantially the opposite function (the SMS keyboard interprets repeated key presses as a single output character which may convert numbers into letters versus the OFA Streamer Remote which interprets repeated key presses as multiple output characters), in substantially the opposite way (the SMS Keyboard uses single presses versus the OFA Streamer Remote which counts the number of presses), to achieve substantially the opposite result (the SMS Keyboard interprets pictorial key presses as the code dictates versus the OFA Streamer Remote which converts and displays numbers as letters and words). (*Id.*). Thus, the OFA Streamer Remote does not have an equivalent structure. (*Id.*).

Moreover, as Respondents pointed out, Roku's equivalence argument fails because Roku

applied the wrong legal for § 112, ¶ 6 equivalence.²⁴ Roku alleged that “[t]he URC 7935 keyboard and an SMS keyboard perform *substantially the same function* (mapping one type of value onto another)” (CBr. at 26 (emphasis added)). Under § 112, ¶ 6 equivalence, “the accused device must perform the *identical function* as recited in the claim element....” *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1320-21 (Fed. Cir. 1999) (emphasis added). “A key feature that distinguishes equivalents under 35 U.S.C. section 112, paragraph 6 and equivalents under the doctrine of equivalents is that 35 U.S.C. section 112, paragraph 6 equivalents must perform the *identical function* of the disclosed structure...while equivalents under the doctrine of equivalents need only perform a substantially similar function.” *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000) (emphasis added) (internal quotations omitted). Neither Roku nor Dr. Balakrishnan alleged that the OFA Streamer Remote’s keyboard performs an identical function to an SMS keyboard. (CBr. at 26.). Rather, they alleged it is merely “substantially the same.” (*Id.*). This is legally insufficient for § 112, ¶ 6 equivalence.

Accordingly, Roku has failed to demonstrate by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

The Parties agreed that limitation 14(b) is a means-plus-function limitation and that the function is “accepting an identifier-entry.” (Order No. 30 (Jan. 14, 2022) at 4.). Roku presented evidence that the URC 1160 performs this function by accepting a key press. For example, to set up control of an Insignia TV, a “1” button entry is accepted as a brand-identifier. In another example, to set up control of an Acer TV, a 5-digit code entry is accepted as a code-set-identifier.

²⁴ Roku alleged equivalency only under § 112, ¶ 6 and not under the doctrine of equivalents. (CBr. at 25-26.).

(JX-0051.0002-3 (SR-002-R Users Guide); JX-0557.0001-2 (URC 1160 User Guide); Tr. (Balakrishnan) at 232:22-23; *see also* Section VI.B.4(a), *supra* (discussion of limitation 1(b))). The evidence shows that URC 1160 performs this function using a numerical keyboard, which satisfies the adopted construction of the corresponding structure as “a numerical or SMS keyboard.” (JX-0051; Tr. (Balakrishnan) at 232:18-25; CDX-0003C.0039-40; *see also* Section VI.B.4(a), *supra* (discussion of limitations 1(pre) and 1(b))).

Respondents asserted the same non-infringement arguments for claim 1(b) for the URC 1160 and for claim 14(b) for the URC 7935. For the reasons discussed in Section VI.B.4(a) with respect to claim 1(b), Roku has demonstrated by a preponderance of evidence that the Charter Spectrum RF4CE Remote meets this claim limitation.

iv. [14(c)]: “means for scanning through remote control code-sets in a database stored in a memory of the Remote Control wherein the means for scanning are adapted for”

OFA Streamer Remote (URC 7935).

The Parties agreed that limitation 14(c) is a means-plus-function limitation and that the function is “scanning through remote control code-sets.” (Order No. 32 (Jan. 21, 2022) at 9.). The structure of limitation 14(c) requires “processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional).” (*Id.* at 9-13.). It is undisputed that the URC 7935 does not literally satisfy this structure. (Tr. (Houh) at 665:17-667:23; RDX-0001.0033-34; Tr. (Balakrishnan) at 223:5-224:5.). Dr. Balakrishnan did not contest this, but instead argued that the URC 7935 uses an equivalent algorithm. (*Id.*).

The construction for “means for scanning” requires two levels of iteration. (Order No. 32 at 12; Tr. (Houh) at 666:1-25; RDX-0001.0034.). For example, as shown in Figure 2, steps 4-11 perform a first level iteration. (JX-0001 at 6:28-49.). A second scan or iteration is performed at

steps 12-13. (*Id.* at 6:55-67; Tr. (Houh) at 666:6-9; RDX-0001.0034.).

Figure 2: Figure 5 of the '875 Patent

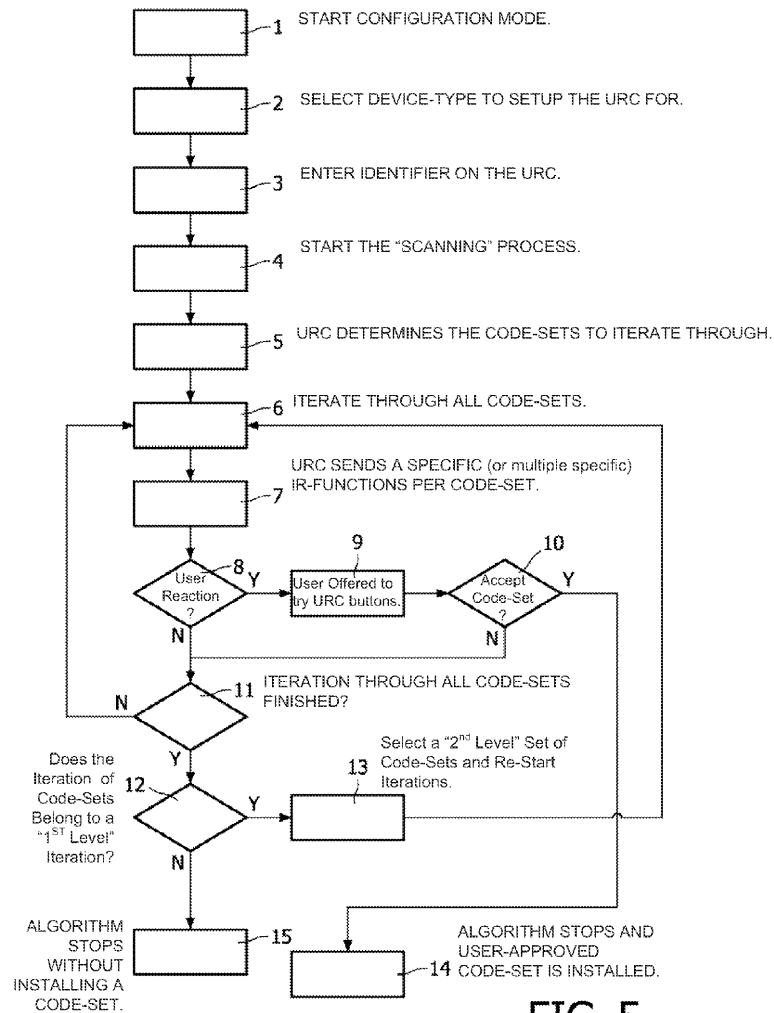


FIG. 5

(JX-0001 at Fig. 5.).

The '875 patent describes the relationship of the first and second level iterations as follows:

In step 12 the algorithm checks if the iteration, that was finished in step 11, *was an iteration of code sets belonging to a brand ("first level" iteration)*. If so, the algorithm proceeds to step 13. This means that no code-set was found by iterating through the available code-sets. *In step 13 a "second-level" set of code sets is selected and the iteration is re-started. This 'second-level' set could for instance*

consist of a list containing 1) all Brands for the device-type and/or 2) a list of back-up code-sets known to be likely candidates. Then the algorithm continues with this new list to iterate through at step 6.

(*Id.* at 6:55-64 (emphases added).).

Thus, the '875 patent envisions that if the first level of iteration fails (e.g., iterating through code sets for a brand), the remote would then perform a second level of iteration through different code sets (e.g., iterating through all brands for a device type or backup code sets for likely candidates). (*Id.*; Tr. (Houh) at 666:10-23.).

Dr. Balakrishnan acknowledged that the URC 7935 does not literally perform the required second level of iteration. (Tr. (Balakrishnan) at 223:17-22; *see also* Tr. (Houh) at 667:1-5.). Instead, the crux of the dispute is whether the URC 7935 performs an equivalent algorithm to a second level iteration under § 112, ¶ 6 equivalence. (*Id.*; CBr. at 26-27.). Dr. Balakrishnan alleged that the URC 7935 performs an equivalent algorithm when they scan through the same code sets for a brand a second time. (Tr. (Balakrishnan) at 223:17-25; *see also* Tr. (Houh) at 667:1-23.).

However, as Dr. Houh testified, performing a re-scan of the first level iteration is not an equivalent to the claimed structure. (Tr. (Houh) at 667:1-23; RDX-0001.0034.). The '875 patent discloses that the purpose of the second level of iteration is to locate a working code set that was not available in the first level of iteration. (JX-0001 at 6:55-64; Tr. (Houh) at 666:10-23.). Under Dr. Balakrishnan's approach, a user who did not find the correct brand code in the first-level iteration would still not find the correct brand code in the second iteration of the same codes. (Tr. (Houh) at 667:7-9.).

Moreover, as discussed above in Section IV.B.4(i), Roku's equivalence argument fails

because Roku applied the wrong legal standard for § 112, ¶ 6 equivalence.²⁵ Roku asserted that “[t]he two-scan procedure performs *substantially the same function* as the one-scan procedure (iterating through remote control code-sets) ...” (CBr. at 27 (emphasis added)). As discussed above, under § 112, ¶ 6 equivalence “the accused device must perform the *identical function* as recited in the claim element....” *Al-Site Corp.*, 174 F.3d at 1320-21 (emphasis added); *see also Kemco Sales, Inc.*, 208 F.3d 1364. Neither Roku nor Dr. Balakrishnan alleged that the OFA Streamer Remote algorithm performs an identical function. (CBr. at 27.). Instead, they argued it is merely “substantially the same.” (*Id.*). This is legally insufficient for § 112, ¶ 6 equivalence.

For the reasons discussed above, Roku has failed to demonstrate by a preponderance of evidence that the OFA Streamer Remote meets this claim limitation.

Charter Spectrum RF4CE Remote (URC 1160).

The Charter Spectrum RF4CE Remote does not meet limitation 14(c) the adopted construction. The structure of limitation 14(c) requires a “processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional).” (Order No. 32 at 9-13.). It is undisputed that the Charter/Spectrum RF4CE Remote does not literally satisfy this structure. (Tr. (Houh) at 665:17-667:23; RDX-0001.0033-34; Tr. (Balakrishnan) at 223:5-224:5.). Dr. Balakrishnan did not deny this, but instead contended that the Charter Spectrum RF4CE Remote uses an equivalent algorithm. (*Id.*) Dr. Balakrishnan’s arguments are the same here as for the OFA Streamer Remote and are incorrect for the same reasons discussed above.

Accordingly, Roku has failed to demonstrate by a preponderance of evidence that the

²⁵ Roku alleged equivalency only under § 112, ¶ 6 and not under the doctrine of equivalents. (CBr. at 26-27.).

Charter Spectrum RF4CE Remote meets this claim limitation.

v. [14(c)(1)] and [14(c)(2)]: identical to [1(c)(1)] and [1(c)(2)]

OFA Streamer Remote (URC 7935).

Limitations 14(c)(1) and 14(c)(2) are identical to limitations 1(c)(1) and 1(c)(2). (JX-0001.). The URC 7935 satisfies limitations 14(c)(1) and 14(c)(2) for the same reasons discussed above with respect to limitations 1(c)(1) and 1(c)(2). (See Section VI.B.4(a), *supra* (discussion of limitations 1(c)(1) and 1(c)(2)).).

Charter Spectrum RF4CE Remote (URC 1160).

The URC 1160 satisfies limitations 14(c)(1) and 14(c)(2) for the same reasons discussed above with respect to limitations 1(c)(1) and 1(c)(2). (See Section IV.B.4, *supra* (discussion of limitations 1(c)(1) and 1(c)(2)); Tr. (Balakrishnan) at 232:10-16; CDX-0003C.0039.).

5. Altice/Charter Pulse RF Remote (URC 2068): Claims 1-5, 8, and 10

As discussed above in Section VI.B.2, the URC 2068 operates nearly identically to the URC 1160, with certain minor differences. To enter the configuration mode, a user of a URC 1160 presses and holds the MENU and OK keys until the input key blinks twice, whereas a user of the URC 2068 presses and holds the SETUP key until the LED blinks twice. (RX-0907 (URC 2068 User Manual) at 1-2; *cf.* JX-0557.0001-2 (URC 1160 User Guide).). The code-set-identifiers for the URC 1160 are five-digit codes, compared to four-digit codes for the URC 2068. (*Id.*). The URC 2068 also supports an additional set-up mode called Code Search. (*Id.*; Tr. (Balakrishnan) at 237:12-238:12.).

Except for the additional set-up mode, which is relevant only to claim 9 and is discussed separately above in Section VI.B.4, none of these differences is relevant to any of Roku's infringement arguments, Respondents' non-infringement arguments, or Roku's rebuttal

arguments. (Tr. (Balakrishnan) at 237:12-238:12.). Accordingly, the URC 2068 infringes claims 1-5, 8, and 10 for the same reasons as the URC 1160. (*Id.*; *see* Section VI.B.4, *supra.*).

6. WOW Experience Remote (URC 2135): Claims 1-4, 8, and 10

As discussed above in Section VI.B.2, the URC 2135 operates substantially the same as the URC 1160 (as well as the URC 2068), with certain minor and mostly irrelevant differences. To enter the configuration mode, a user of a URC 1160 presses and holds the MENU and OK keys until the input key blinks twice, whereas a user of the URC 2135 presses and holds the MUTE and OK keys until the power key blinks twice. (JX-0056.0002-3 (URC 2135 manual); *cf.* JX-0557.0001-2 (URC 1160 User Guide).).

Additionally, a user of the URC 1160 can use the Popular Brands setup method to control a TV, whereas a user of the URC 2135 can use Popular Brands to control either a TV or an audio device. (JX-0056.0002 (URC 2135 manual); *cf.* JX-0557.0001 (URC 1160 User Guide).).

Before entering a brand-identifier, a user of the URC 1160 presses the TV Power key, whereas a user of the URC 2135 presses either the “A” key (to control a TV) or the “B” key (to control an audio device). (JX-0056.0002 (URC 2135 manual); *cf.* JX-0557.0001 (URC 1160 User Guide).).

The code-set-identifiers for the URC 1160 are five-digit codes, compared to four-digit codes for the URC 2135. (JX-0056.0002 (URC 2135 manual); *cf.* JX-0557.0001 (URC 1160 User Guide).). The URC 2135 also supports an additional set-up method called Code Search. (JX-0056.0003 (URC 2135 manual); Tr. (Balakrishnan) at 243:19-244:3.).

Except for the additional set-up mode and the fact that the URC 2135 can use Popular Brands to set up two device types, which are relevant only to claims 5 and 9 (and is discussed separately above in Section VI.B.4), none of these differences is relevant to any of Roku’s infringement arguments, Respondents’ non-infringement arguments, or Roku’s rebuttal

arguments. (Tr. (Balakrishnan) at 243:19-244:3.). Accordingly, the URC 2135 infringes claims 1-4, 8, 10 and 14 for the same reasons as the URC 1160. (*Id.* at 244:4-9.).

Moreover, Respondents did not dispute in their Pre-hearing brief or during the Hearing that the additional limitations of claims 2-3, 5, and 10 are present in the URC 2135. (Tr. (Houh) at 645:2-11; RDX-0001.0018.). Thus, any argument with respect to these claims are deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

C. Indirect Infringement

1. Legal Standard

“Whoever actively induces infringement of a patent shall be liable as an infringer.” 35 U.S.C. § 271(b). A patentee asserting a claim of inducement must show (i) that there has been direct infringement and (ii) that the alleged infringer “knowingly induced infringement and possessed specific intent to encourage another’s infringement.” *Minnesota Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1304-05 (Fed. Cir. 2002). With respect to the direct infringement requirement, the patentee “must either point to specific instances of direct infringement or show that the accused device necessarily infringes the patent in suit.” *ACCO Brands, Inc. v. ABA Locks Mfrs. Co., Ltd.*, 501 F.3d 1307, 1313 (Fed. Cir. 2007) (citation omitted). This requirement may be shown by circumstantial evidence. *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1326 (Fed. Cir. 2009). “[A] finding of infringement can rest on as little as one instance of the claimed method being performed during the pertinent time period.” *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317 (Fed. Cir. 2009); *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1364 (Fed. Cir. 2012) (citing *Lucent Techs.*, 580 F.3d at 1317).).

The specific intent requirement for inducement necessitates a showing that the alleged infringer was aware of the patent, induced direct infringement, and that he knew that his actions

would induce actual direct infringement. *Commil USA, LLC v. Cisco Sys., Inc.*, 720 F.3d 1361, 1367 (Fed. Cir. 2013), *aff'd and vacated in part on other grounds*, 135 S. Ct. 1920, 1926-28 (2015); *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2068-70 (2011). Specific intent can be shown by, for example: (1) changes in importation practices effectuated to shift infringement liability; (2) the infringer's copying of patented technology; and (3) the infringer's willful blindness of the underlying direct infringement. *Certain Network Devices, Related Software and Components Thereof (I)*, Inv. No. 337-TA-944, Initial Determination at 82; *see also Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1924-25 (2015) ("It was not only knowledge of the existence of [the asserted] patent that led the Court to affirm the liability finding but also it was the fact that [the accused infringer] copied 'all but the cosmetic features of the [patented product],' demonstrating [the accused infringer] kn[ew] it would be causing customers to infringe [the asserted] patent.") (quoting *Global-Tech*, 131 S. Ct. at 2071).). Willful blindness, which also constitutes "knowledge," has two basic requirements: "(1) the defendant must subjectively believe that there is a high probability that a fact exists"; and "(2) the defendant must take deliberate actions to avoid learning of that fact." *Global-Tech*, 131 S. Ct. at 2070. The intent to induce infringement may be proven with circumstantial or direct evidence and may be inferred from all the circumstances. *Commil*, 720 F.3d at 1366; *Global-Tech*, 131 S. Ct. 2071-72.

2. Analysis²⁶

a) **Roku Failed to Prove that Respondents or End Users Directly Infringed the Asserted Method Claims**

²⁶ Roku did not allege contributory infringement in its Pre- or Post-Hearing Briefs. (CPBr. at 42; CBr. at 50-51.). Thus, any allegation of contributory infringement has been deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Alleged Use by UEI.

Roku has failed to demonstrate that any UEI entity or employee have performed the accused functionalities on any 875 Accused Product in the United States. (CBr. at 48.). UEI does not perform “testing, quality assurance work, or use of [the Accused Products] in the United States.” (JX-0555C.0088 (Rog. No. 24).). Additionally, UEI “does not authorize any formal testing quality assurance work, or use of the [875 Accused Products] in the United States.” (*Id.*) Instead, any testing or quality assurance work is performed outside of the United States at the factories, which Mr. Haughawout confirmed. (*See id.*; JX-0551C (Haughawout Dep. Tr.) at 136:20-24 (“Q. Are the remotes tested in the manufacturing plants generally? A. Yes. Q. Are [the remotes] ever tested in the United States? A. No. Not by UEI.”).).

Roku alleged that Mr. “Haughawout testified that he owns many UEI remotes, and he has personally used the SimpleSet, Setup by Code, and Code Search set-up procedures” and that “Mr. Haughawout also testified that UEI demonstrates those procedures at trade shows.” (CBr. at 48.). However, the cited testimony does not show that UEI or Mr. Haughawout has used an accused feature on an **875 Accused Product** in the United States.²⁷

During his deposition, Mr. Haughawout was asked: “have you *ever* used the SimpleSet procedure?”; “have you *ever* used Setup By Code?”; and “have you used code search....?” (JX-0551C (Haughawout Dep. Tr.) at 95:22-96:5 (emphases added).). During the Hearing, Mr. Haughawout testified that these features existed in UEI remotes since the 1980s. (Tr. (Haughawout) at 444:14-445:7.). Thus, the testimony does not show that Mr. Haughawout used

²⁷ The Parties stipulated that Roku would not seek an adjudication of infringement for Respondents’ products that were only imported before January 1, 2020. (JX-0858 at ¶2 (Joint Stipulation Regarding the Temporal Scope of Discovery and Adjudication of Respondents’ Accused Products).). Thus, the 875 Accused Products are limited to products that were imported after January 1, 2020. (*Id.*).

these features on an **875 Accused Product**, which are limited to products imported after January 1, 2020. (JX-0858 at ¶ 2.). Rather, the testimony strongly suggests that Mr. Haughawout performed these features on prior art non-accused products. (Tr. (Haughawout) at 444:25-445:5 (“I demo’d that in my first trade show in 1998....”).).

Roku’s reliance on testimony regarding use at trade shows suffers from the same problem because UEI has not demonstrated these features at trade shows in the last five years because the accused features “are old and common technology,” which Mr. Haughawout confirmed during the Hearing and in his deposition. (*Id.* at 455:4-12; JX-0551C (Haughawout Dep. Tr.) at 98:3-12.).

Finally, Roku did not identify any evidence of use of the accused features in the United States on behalf of Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, and/or CG México Remote Controls, S. de R.L. de C.V, which are all located outside of the United States. (CBr. at 48; Doc. ID No. 744606 at ¶¶ 14-17, 19.).

Accordingly, Roku failed to show that UEI has directly infringed the asserted method claims.

Alleged Use by Charter.

Mr. Starinieri, Charter’s Group Vice President of Advanced Engineering, repeatedly testified that Charter has not performed the accused functionalities. (Tr. (Starinieri) at 447:10-480:14; JX-0613C (Starinieri Dep. Tr.) at 41:19-42:3, 48:12-49:9, 49:20-50:4, 52:10-21, 62:1-7.). Mr. Starinieri explained that Charter has policies to ensure that Charter does not test the accused functionalities in its lab because using the remotes to control the televisions can negatively impact the testing of Charter’s set top boxes. (Tr. (Starinieri) at 477:21-478-8.).

Additionally, he testified that Charter also has policies to ensure that technicians do not set up a remote to control a television during installation. (*Id.* at 480:4-14.).

Roku alleged that “Charter employees have *almost certainly* used the accused products to control TVs to control TVs while 1) testing their products, 2) drafting user guides and instructional videos for their products, including the URC 1160 Charter Spectrum remote, and 3) advertising their products.” (CBr. at 49 (emphasis added).). Regarding testing, Mr. Starinieri, who manages the teams that support testing of remotes, was explicit:

Q. Does your group do any testing of the remotes that involves programming them to control something other than a set-top box such as a television?

A. No.

* * *

Q. Okay. Are there any other groups at Charter that are responsible for testing remotes other than your group?

A. No.

(Tr. (Starinieri) at 477:10-14, 478:5-8; *see also* Tr. (Starinieri) at 478:9-479:17.).

Similarly, there is no evidence to support the contention that Charter must have performed the accused functionalities to draft user guides or videos. (*See id.* at 486:9-19.).

Accordingly, Roku failed to show that Charter has directly infringed the asserted method claims.

Alleged Use by Altice.

Roku failed to demonstrate that Altice has performed the accused functionalities on any 875 Accused Product in the United States. (CBr. at 49.). Roku alleged that “John Markowski testified that at least one Altice employee has set up an accused Altice remote to control a TV by using both Popular Brand setup and Direct Code Entry setup.” (*Id.*). Roku also alleged that

“Mr. Markowski testified that he has personally set up an accused Altice remote to control a TV by using Direct Code Entry setup.” (*Id.*).

The testimony Roku cited fails to show that Altice used an accused feature *on an 875 Accused Product* in the United States. Similar to the testimony discussed above for UEI, the testimony Roku cited does not show that Altice has performed the accused features on the Altice Accused Product, the URC 2068 (Pulse RF). Moreover, like Mr. Haughawout, Mr. Markowski was asked open-ended questions which were not specific to the Altice Accused Product: “is your understanding that at least one of Altice employees has set up *a Altice remote* to control TV by using Popular Brand?”; “is it your understanding that at least some of Altice employees have set up *a Altice remote* to control a TV by using that Direct Code Entry setup?”; and “have you ever setup *a Altice remote* by using Direct Code Entry Setup?” (JX-0618C (Markowski Dep. Tr.) at 56:8-17, 58:22-59:4, 58:19-21 (emphases added)). As the 875 Respondents pointed out, Mr. Markowski’s testimony does not show that Altice performed these features on the Altice Accused Product as opposed to non-accused remotes such as remotes that were not made by UEI or remotes that do not satisfy the temporal limitation on Accused Products. (RX-3389 (confirming Roku allegations of infringement are related to only UEI remotes); JX-0858 at ¶ 2.).

When read in its proper context, Mr. Markowski’s testimony is clear that he has not tested the URC 2068 (RF) remote.

Q. At least is this fair to say this remote, URC2068, was tested at least once by Altice before?

A. I do not know. I can’t -- I can’t testify to that, that it was tested or not prior to use.

(JX-0618C (Markowski Dep. Tr.) at 59:19-61:2.).

Q. Have you ever set up Altice remote to control a TV by using Popular Brand

setup?

A. *I have never set up this Remote to do Popular Brand.*

Q. Which remote you have used to set up to control the TV by using Popular Brand setup?

A. *I personally have never set up the Popular Brand at home.* I've tried it on one of -- maybe one of our older remotes. I do not know or remember what remote it was.

(*Id.* at 55:7-19 (emphases added) (discussing the URC 2068 (Pulse RF) Remote).).

Mr. Markowski also testified that the URC 2068 is a “legacy remote from when [Altice] acquired Suddenlink Properties” and there is “none of the technical staff from the Suddenlink teams” at Altice anymore. (JX-0618C (Markowski Dep. Tr.) at 33:14-34:16, 36:4-17.). He explained that as a legacy remote, Altice does not “verify or test any of them” but instead has them “deployed to [their] customers.” (*Id.* at 36:11-17.). Additionally, it was Suddenlink employees who were involved with the product specifications. (*Id.* at 34:22-36:17.). As Altice acquired Suddenlink on December 21, 2015 (CX-0098 (Altice-USA Inc. 2020 10-K)), Mr. Markowski’s testimony is clear that Altice has not performed an accused feature on an 875 Accused Product.

Accordingly, Roku failed to show that Altice has directly infringed the asserted method claims.

Use by WOW.

WOW did not dispute that WOW has used the accused functionalities on a URC 2135 (WOW Experience Remote). (*See, e.g.,* RRB. at 33.).

Alleged Use by End Users.

Roku and Dr. Balakrishnan have not identified a single end-user that used the 875 Accused Product to perform the accused functionalities. As Respondents pointed out, the

accused functionalities performed by the 875 Accused Products are *optional* methods of performing *optional* features.

Each of the 875 Accused Products are designed to work with another device such as Roku TVs (for the OFA Streamer remote) or set-top boxes (for the Charter/Spectrum RF4CE Remote, Pulse RF, and WOW Experience Remotes). Using the accused functionalities to program the 875 Accused Products to control another device such as a television is an optional feature of the 875 Accused Products. (*See* Tr. (Houh) at 767:20-768:6.). Moreover, each of the 875 Accused Products has alternative, non-infringing programming methods for this optional feature. (*Id.* (discussing QuickSet and IR learning).). Thus, even if an end user programmed any remote to control another device, they may have done so using a non-infringing method. (*Id.*).

As shown in the user guide, the OFA Streamer Remote (URC 7935) may be used without a user ever programming the remote because the remote is already preprogrammed to work with a Roku TV. (JX-0868 (“The OFA Streamer Remote is pre-programed to control a TCL branded Roku TV. Just insert batteries and it will work directly”).). Additionally, the OFA Streamer Remote (URC 7935) may be programmed using Method C for IR learning. (*Id.* at .0002.). Finally, the OFA Streamer Remote (URC 7935) may be programed with auto search. (RX-0902C at 00030387.). This suggests that a user may not use the accused functionalities.

Respondents also presented convincing testimony that the Charter Spectrum RF4CE Remotes (URC 1160) may be used without a user entering a brand or direct code-set because the remote may be: (i) used to control a set-top box without being programmed to control another device; (ii) programmed using the QuickSet feature; or (iii) programed with simple library search (i.e., auto-scan). (JX-0615C.0050 (discussing simple library search), .0068-70 (discussing QuickSet); Tr. (Houh) at 767:20-768:6; Tr. (Haughawout) at 446:15-447:12.).

Likewise, product specification and corroborating testimony confirms that the Altice Pulse RF Remote (URC 2068) may be used without a user entering a brand or direct code-set because the remote may be: (i) used to control a set-top box without being programmed to control another device; and (ii) programmed using the auto-scan method called “Simple Library Search.” (JX-0185C at 00003621, 3642; JX-0622C.).

Similarly, according to the product specification and user guide, the WOW Experience (URC 2135) Remote may be used without a user entering a brand or direct code-set because the remote may be: (i) used to control a set-top box without being programmed to control another device; and (ii) programmed using the auto-scan method called “Simple Library Search.” (JX-0187C at 00023229; JX-0865C.).

For the foregoing reasons, Roku failed to show that the 875 Respondents’ end users have directly infringed the asserted method claims.

b) Knowledge of the ’875 Patent

Roku did not contend that the 875 Respondents were placed on notice of infringement before service of the Complaint in this Investigation. (CBr. at 51.). Roku also failed to identify any acts of direct infringement since the Complaint was served and the 875 Respondents were put on notice of their alleged infringement. (*Id.*).

Respondents relied on *Zapfraud, Inc. v. Barracuda Networks, Inc.* for the proposition that “[t]he complaint itself cannot be the source of the knowledge required to sustain claims of [indirect] infringement.” (RRbr. at 35 (citing *Zapfraud, Inc. v. Barracuda Networks, Inc.*, 528 F. Supp. 3d 247, 250 (D. Del. 2021); *VLSI Tech. LLC v. Intel Corp.*, 2019 WL 1349468, at *2 (D. Del. Mar. 26, 2019))).

However, as the court in *Zapfraud* noted, “recent judges of this District have also taken

different views on the issue” and “[n]either the Federal Circuit nor the Supreme Court has addressed the issue.” *Zapfraud*, 528 F. Supp. 3d at 250.²⁸ Thus, whether or not the 875 Respondents had pre-suit knowledge of the ’875 patent is not dispositive. The fact that Roku has failed to present evidence showing that the 875 Respondents directly infringed since the filing of the Complaint undermines Roku’s allegations of induced infringement.

c) Knowledge the Induced Acts Constitute Infringement

Roku did not set forth any evidence that the 875 Respondents had the necessary intent to cause infringement of ’875 patent. As Mr. Haughawout testified, the 875 Respondents’ absence of intent is demonstrated by their non-infringement and invalidity theories. (Tr. (Haughawout) at 456:10-16 (“the consensus was we don’t infringe....”); *see also* Tr. (Balakrishnan) at 353:2-6.). The mere fact that a third party may have allegedly performed some actions that Roku alleges to infringe the asserted claims, without more, does not mean that the 875 Respondents encouraged or knew of such alleged infringement. Roku has not provided any evidence since the 875 Respondents were placed on notice of infringement that the 875 Respondents: (i) actively encouraged infringement; (ii) knew that the acts they allegedly induced constituted patent

²⁸ Citing and comparing *Mallinckrodt, Inc. v. E-Z-Em Inc.*, 670 F. Supp. 2d 349, 354 n.1 (D. Del. 2009) (Farnan, J.) (requiring pre-suit knowledge for induced infringement claims), *Xpoint Techs., Inc. v. Microsoft Corp.*, 730 F. Supp. 2d 349, 357 (D. Del. 2010) (Robinson, J.) (same), *NETGEAR Inc. v. Ruckus Wireless Inc.*, 2013 WL 1124036, at *1 (D. Del. Mar. 14, 2013) (Robinson, J.) (requiring pre-suit knowledge for willfulness claims), *SoftView LLC v. Apple Inc.*, 2012 WL 3061027, at *8 (D. Del. July 26, 2012) (Stark, J.) (same), *Bonutti Skeletal Innovations LLC v. Conformis, Inc.*, 2013 WL 6040377, at *2 n.5 (D. Del. Nov. 14, 2013) (Sleet, J.) (same), and *Callwave Comm'ns LLC v. AT & T Mobility LLC*, 2014 WL 5363741, at * 1 (D. Del. Jan. 28, 2014) (Andrews, J.) (same) with *Walker Digital, LLC v. Facebook, Inc.*, 852 F. Supp. 2d 559, 565 (D. Del. 2012) (Robinson, J.) (permitting induced infringement claims based on post-suit conduct), *SoftView LLC v. Apple Inc.*, 2012 WL 3061027, at *8 (D. Del. July 26, 2012) (Stark, J.) (same), *Groove Digital, Inc. v. King.com, Ltd.*, 2018 WL 6168615, at *2 (D. Del. Nov. 26, 2018) (Andrews, J.) (same), *DoDots Licensing Sols. LLC v. Lenovo Holding Co., Inc.*, 2019 WL 3069773, at *3 (D. Del. July 12, 2019) (Noreika, J.) (same), *IpVenture Inc. v. Lenovo Grp. Ltd.*, 2013 WL 126276, at *3 (D. Del. Jan. 8, 2013) (Andrews, J.) (permitting willfulness-based enhanced damages claims based on post-suit knowledge), and *Clouding IP, LLC v. Amazon.com, Inc.*, 2013 WL 2293452, at *4 (Stark, J.) (D. Del. May 24, 2013) (same).

infringement; or (iii) encouraged acts actually resulting in direct infringement of the '875 patent.

To the contrary, the record demonstrates that since the Complaint was filed on April 8, 2021, Respondents took the allegations seriously and determined they did not infringe. (Tr. (Haughawout) at 456:10-16.). Additionally, since the Complaint was filed, Respondents provided evidence that UEI has not sold any 875 Accused Products to either WOW or Altice. (Tr. (Haughawout) at 455:19-456:2 (confirming no sales since October of 2020); JX-0221C (WOW Purchase Order, dated May 12, 2020); JX-0275C (Altice Purchase Order, dated Oct. 27, 2020). Thus, at an absolute minimum, Roku failed to show that UEI has induced infringement with respect to WOW, Altice, or any of their customers.

D. Technical Prong of Domestic Industry

1. Legal Standard

A complainant in a patent-based Section 337 investigation must demonstrate that it is practicing or exploiting the patents at issue. *See* 19 U.S.C. § 1337(a)(2) and (3); *Certain Microsphere Adhesives, Process for Making Same, and Prods. Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, Comm'n Op. at 8, Pub. No. 2949 (U.S.I.T.C. Jan. 16, 1996) ("*Microsphere Adhesives*"). "In order to satisfy the technical prong of the domestic industry requirement, it is sufficient to show that the domestic industry practices any claim of that patent, not necessarily an asserted claim of that patent." *Certain Ammonium Octamolybdate Isomers* ("*Certain Isomers*"), Inv. No. 337-TA-477, Comm'n Op. at 55 (U.S.I.T.C. Jan. 5, 2004).

The test for claim coverage for the purposes of the technical prong of the domestic industry requirement is the same as that for infringement. *Certain Doxorubicin and Preparations Containing Same*, Inv. No. 337-TA-300, Initial Determination at 109, 1990 WL

710463 (U.S.I.T.C. May 21, 1990), *aff'd*, Views of the Commission at 22 (October 31, 1990) (“*Doxorubicin*”). “First, the claims of the patent are construed. Second, the complainant’s article or process is examined to determine whether it falls within the scope of the claims.” *Id.* The technical prong of the domestic industry can be satisfied either literally or under the doctrine of equivalents. *Certain Dynamic Sequential Gradient Devices and Component Parts Thereof*, Inv. No. 337-TA-335, Initial Determination at 44, Pub. No. 2575 (U.S.I.T.C. Nov. 1992).

2. Relevant Factual Background

a) No Roku Product Exists that Practices the ’875 Patent

It is undisputed that Roku has not made an operational prototype of the Gazelle remote and there is no date certain for release. (Tr. (Jeffrey Peters) at 108:3-22, 109:12-14, 109:22-25, 109:16-24.).²⁹ As a result, there is no Gazelle remote to analyze for the technical prong. For example, Mr. Nino Marino, the Gazelle project manager and Roku corporate witness, testified that “[t]he remote *doesn’t exist yet*,” which pushed him to prepare for his deposition with documents regarding the Gazelle remote’s “intended operation.”³⁰ (JX-0478C (Marino Dep. Tr.) at 19:3-9 (emphasis added).).

As shown below in Figure 3,



(Tr. (Peters) at

²⁹ When he testified during the Hearing on January 24, 2022, Mr. Jeffrey Peters was a Senior Software Engineer at Roku. (Tr. (Peters) at 65:22-24.). Roku identified Mr. Peters as a fact witness to testify about matters relating to the operation of domestic industry products. (CPSt. at 2.).

³⁰ When he provided his deposition testimony on September 24, 2021, Mr. Nino Marino was the Project Manager for the Gazelle remote at Roku. (RPSt. at 8.). Respondents identified Mr. Marino as a fact witness to testify about, *inter alia*, “the design, development, research, operation, function, performance, features, and/or structure of the Domestic Industry Products[.]” (*Id.*).

102:1-22; CX-1153C; RDX-0029C.0002; JX-0478C (Marino Dep. Tr.) at 23:4-6, 105:4-9,

105:25-106:8.).

it cannot practice any claim of the '875 patent. (*Id.*).

Figure 3:

(RDX-00029C.0002.).

It is also undisputed that

(Tr. (Peters) at 108:11-18; 110:16-24; Tr. (Houh) at 673:8-23.).

(JX-0647C at 5 (Rog. No. 61); RDX-0001C.0044; Tr. (Houh) at

673:2-17; Tr. (Peters) at 108:3-22.). (JX-0478C

(Marino Dep. Tr.) at 71:14-23; JX-0539C (Tito Thomas Dep. Tr.)³¹ at 48:19-49:10; JX-0522C

(Peters Dep. Tr.) at 81:19-82:17.). Thus, during fact discovery, [REDACTED]

[REDACTED] (*Id.*; Tr. (Houh) at 673:15-17.).

The feature that will allegedly practice the '875 patent is internally referred to as the "unified TV IR code feature." (JX-0480C; JX-0524C; Tr. (Houh) at 670:11-16.). Roku contended that once the Gazelle remote implements the hypothetical unified TV IR code feature, the Gazelle will allegedly practice the '875 patent. (Tr. (Houh) at 670:11-16.). Mr. Marino stated that [REDACTED]

[REDACTED] (JX-0478C (Marino Dep. Tr.) at 131:5-132:10.). Mr. Tito Thomas (Director of Engineering) testified that [REDACTED] version of the implementation by Q2 2022. (JX-0539C (Thomas Dep. Tr.) at 14:19-20, 67:1-8. Mr. Andrew Soh (Software Program Manager) testified that [REDACTED]

[REDACTED]³² (JX-0889C (Soh Dep. Tr.) at 16:8-15, 65:13-66:1.). Mr. Jeffrey Peters (Roku Senior Software Engineer) [REDACTED]

[REDACTED] (JX-0522C (Peters Dep. Tr.) at 20:2-5.). It appears from these witnesses that Roku has no definitive timeline by which it will create a device that will purportedly implement the unified TV IR code feature and allegedly practice the '875 patent.

³¹ When he provided his deposition testimony on September 30, 2021, Mr. Tito Thomas was the Director of Engineering for the Gazelle remote at Roku. (RPSt. at 8.). Respondents identified Mr. Thomas as a fact witness to testify about, *inter alia*, "the design, development, research, operation, function, performance, features, and/or structure of the Domestic Industry Products[.]" (*Id.* at 8-9.).

³² When he provided his deposition testimony on October 6, 2021, Mr. Andrew Soh was a Senior Program Manager at Roku. (RPSt. at 8.). Respondents identified Mr. Soh as a fact witness to testify about, *inter alia*, "the design, development, research, operation, function, performance, features, and/or structure of the Domestic Industry Products[.]" (*Id.*).

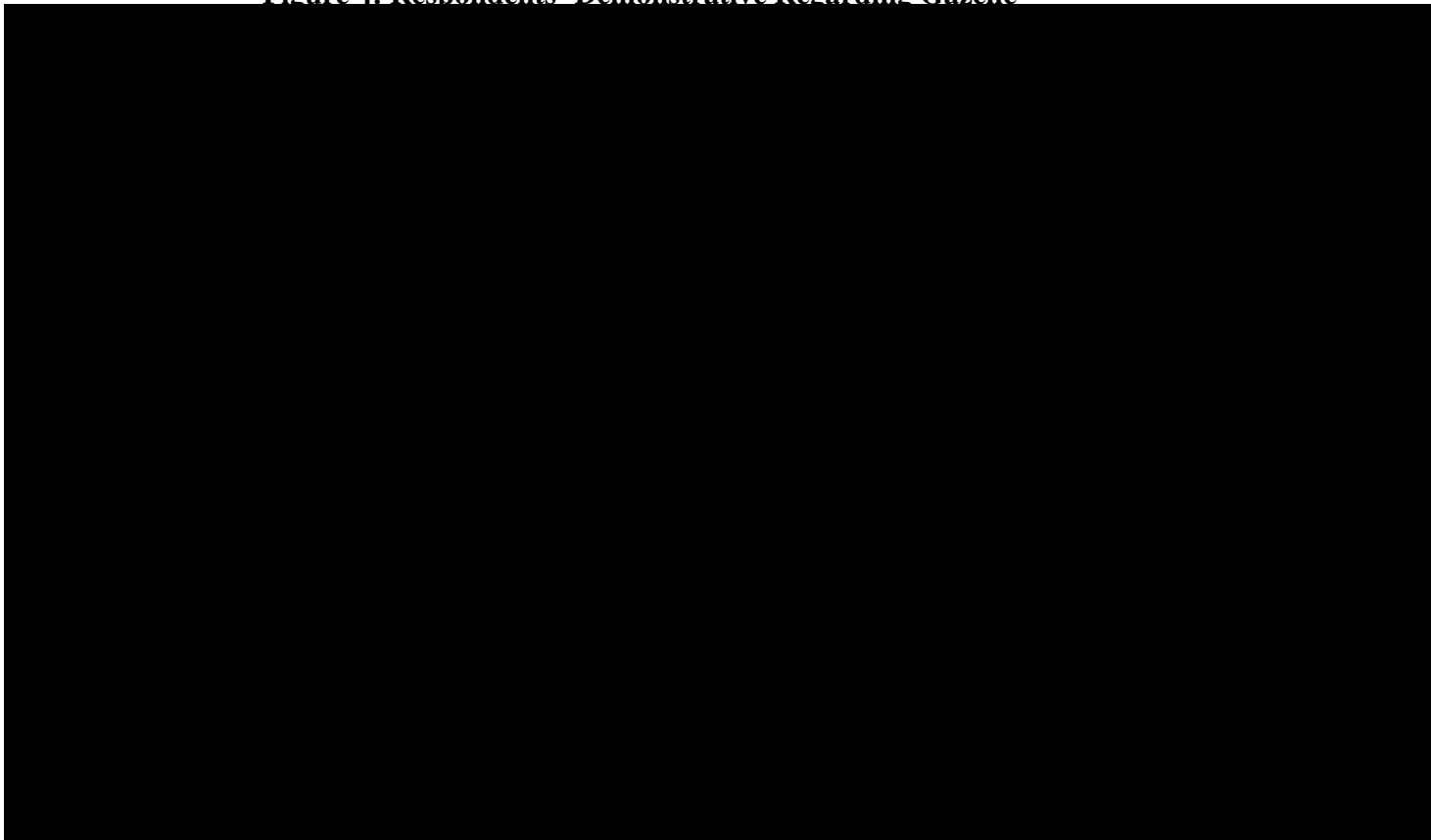
b) [REDACTED]

It is undisputed that Roku has not [REDACTED]

[REDACTED] (JX-0647C at 5 (Rog. No. 61); Tr. (Peters) at 108:11-18; 110:16-24; Tr. (Houh) at 673:8-23.). Roku’s employees and Mr. Ryan N. Herrington testified about Roku’s decision to not devote the necessary resources because other projects were more “time-sensitive” than establishing domestic industry.³³ (JX-0539C (Thomas Dep. Tr) at 50:11-51:3, 52:9-17; JX-0478C (Marino Dep. Tr.) at 158:9-159:4; Tr. (Houh) at 671:19-672:8; RDX-0001C.0040-.41; Tr. (Herrington) at 795:17-796:18.). Moreover, Roku testified that [REDACTED] [REDACTED] (JX-0539C (Thomas Dep. Tr) at 85:22-86:4; Tr. (Houh) at 672:9-14; RDX-0001C.0042; JX-0480C; Tr. (Herrington) at 794:5-21.). Furthermore, [REDACTED] [REDACTED] (JX-0889C (Soh Dep. Tr.) at 63:7-64:7; Tr. (Houh) at 672:15-673:1; RDX-0001C.0043; JX-0524C.).

³³ When he testified during the Hearing on January 26, 2022, Mr. Ryan Neil Herrington was Senior Managing Director at FTI Consulting. (Tr. (Herrington) at 787:1-20.). Respondents identified Mr. Herrington as an expert witness to testify about matters relating Roku’s lack of the economic prong of Domestic Industry and the appropriate remedy and bond in the event a violation of Section 337 is found.

Figure 4: Respondents' Demonstrative Regarding Gazelle



(RDX-0001C.0043 (citing JX-0524C; RX-0320C.0017)).

In the Complaint, Roku alleged [REDACTED] (Doc. ID No. 739355 (Exhibit 5C to Compl.) at ¶ 59.). Subsequently, Roku [REDACTED] [REDACTED] (JX-0539C (Thomas Dep. Tr.) at 64:3-19.). [REDACTED] (*Id.*). As a result, the 875 Respondents have not had an opportunity to assess whether Gazelle will ever actually meet each and every claim limitation of one or more claims of the '875 patent.

c) There Was No Practicing Product at the Time of the Complaint (April 8, 2021)

The facts regarding the lack of development of the Gazelle remote and the unified TV IR code feature at the time Roku filed the Complaint (April 8, 2021) are undisputed: Roku had no

product that practiced the '875 patent at the time that it filed its Complaint (April 8, 2021). (JX-0839C (Roku's Responses to RFA Nos. 397-410) at 202-209 (admitted that "as of April 8, 2021, Roku did not have a product that Roku contends satisfies the technical prong of domestic industry for [claims 1-4, 8, 10, or 14] of the 875 Patent" and admitted that "as of April 8, 2021, Roku had not used a Roku product to perform a method that Roku contends practices [claims 1-4, or 8] of the 875 Patent"); Tr. (Houh) at 669:17-670:2.). In sum, as of April 8, 2021, there was no Roku device anywhere in the world that fully implemented the unified TV IR code feature. (Tr. (Peters) at 108:19-22.).

During the Hearing, Mr. Peters acknowledged that as of April 8, 2021, Roku had *not*:

- Made, used, sold, or offered for sale a Gazelle remote (Tr. (Peters) at 106:19-107:8);
- [REDACTED] (Tr. (Peters) at 106:25-107:2; see also Tr. (Houh) at 670:3-6);
- [REDACTED] (Tr. (Peters) at 107:15);
- [REDACTED] (Tr. (Peters) at 107:24-108:2);
- [REDACTED] (Tr. (Peters) at 108:7-10); and
- [REDACTED] (Tr. (Peters) at 108:11-14; see also Tr. (Houh) at 670:7-10).

d) There Was No Practicing Product at the Close of Fact Discovery (October 8, 2021)

The facts regarding the lack of development of the Gazelle remote and the unified TV IR code feature at close of fact discovery (October 8, 2021) are also undisputed: Roku had no product that practiced the '875 patent by the close of fact discovery (October 8, 2021). (Tr. (Peters) at 110:16-24; Tr. (Houh) at 669:17-670:2.). Roku admitted that "Roku does not expect

to have a physical Roku product (e.g., remote control) that Roku contends practices [claims 1-4, 8, 10, or 14] of the 875 patent [REDACTED] (JX-0839C.0238-242 (RFA Nos. 438-444)).

During the Hearing, Mr. Peters acknowledged that as of October 8, 2021, Roku had *not*:

- Made, used, sold, or offered for sale a Gazelle remote (Tr. (Peters) at 109:6-14, 109:22-25);
- [REDACTED] (Tr. (Peters) at 109:12-14, 109:22-25; *see also* Tr. (Houh) at 670:3-6);
- [REDACTED] (Peters 110:1-4; *see also* Tr. (Houh) at 674:3-6);
- [REDACTED] (Tr. (Peters) at 110:5-11; *see also* Tr. (Houh) at 674:11-1)2;
- [REDACTED] (Tr. (Peters) at 110:16-20; *see also* Tr. (Houh) at 670:7-10);
- [REDACTED] (Tr. (Peters) at 111:15-18);
- [REDACTED] (Tr. (Peters) at 111:11-14, 111:19-24); and
- [REDACTED] (Tr. (Peters) at 111:25-112:6).

3. Analysis

a) Roku Failed to Show “Articles Protected by the Patent” at the Time of the Complaint or at the Close of Fact Discovery

Roku has not demonstrated it has met the technical prong requirement. As discussed above, Roku failed to create the necessary critical software that would make a remote control that practices the ’875 patent.

At the close of fact discovery (October 8, 2021), it is undisputed that Roku not only lacked an article, but also much of the fundamental hardware and all of the software components that would practice of the claimed limitations by that article. This fails the domestic industry “in

the process of,” which requires a physical manifestation of an article that practices the patent at issue that is disclosed for evaluation during fact discovery. *See Certain Digital Cameras, Software, and Components Thereof* (“*Digital Cameras*”), 337-TA-1059, ID at 48 (Aug. 17, 2018) (unreviewed by Commission). One cannot merely point to how they intend the product to work without disclosing, for evaluation, the actual hardware and software that will actually carry out the claimed functionality on a tangible product. *Id.* For example, in *Digital Cameras*, a domestic industry was found in the process of when the physical article and the necessary source code “in a sufficiently refined state of development” were disclosed during fact discovery. *Id.* at 50. On the other hand, where necessary components, such as source code, were not available during fact discovery, and no alleged practicing article even existed at the eve of the hearing, there is simply no technical domestic industry for evaluation. *Id.* at 71-72 (“Nikon argued, again, that Zeiss could not satisfy the technical prong of the domestic industry requirement because, until the eve of the Hearing, [Zeiss] did not possess an ‘article protected by the patent.’ At least with respect to the preceding argument, Nikon is correct.”).

Roku’s present situation is even more critical than for complainant Zeiss in *Digital Cameras*, where there was at least a physical prototype (the Zeiss Camera) where the source code with the claimed functionality could be loaded. Roku still does not have a prototype, and has never developed, let alone produced, much of the hardware and or any of the software for the Gazelle remote as needed to practice the claimed functionality of the ’875 patent. This is not about significant likelihood, but rather, substantial proof with respect to the technical prong. The 875 Respondents have had no opportunity to evaluate in fact or expert discovery whether Roku’s future promised product actually would practice the claims of the ’875 patent.

Roku relied upon an order in Inv. No. 337-TA-1170 that a “patent-practicing article need

not yet exist” in an in-the-process domestic industry case. (See CBr at 73 (citing *Certain Mobile Devices with Multifunction Emulators* (“*Multifunction Emulators*”), Inv. No. 337-TA-1170, Order No. 19, at 8-10 (June 9, 2020)).). However, Roku failed to mention that upon petition, the Commission “determined to take no position on the ID’s domestic industry findings related to a domestic industry in the process of being established.” *Multifunction Emulators*, Inv. No. 337-TA-1170, Notice at 4 (July 16, 2021)).).

Roku also cited a 30-year-old ID in support of its argument that an “article need not be in existence” to satisfy a domestic industry. (CBr. at 74.). As Respondents noted, this decision was expressly dismissed by the Commission in 2019: “although an ALJ opined on the issue in *Certain Multiple-Beam Equalization Systems* . . . that order does not constitute the determination of the Commission because the investigation settled prior to a final Commission determination.” *Certain Thermoplastic-Encapsulated Electric Motors*, Inv. No. 337-TA-1073, Comm’n Op. at 11, n.14 (Aug. 12, 2019). Moreover, that decision issued well before the Federal Circuit’s decisions in *Interdigital* and *Microsoft*, which confirmed that one must show the existence of articles that practice the patent. As summarized by the Commission in the 1098 investigation:

Both Federal Circuit law and Commission precedent require the existence of actual “articles protected by the patent” in order to find that a domestic industry exists. See, e.g., *Microsoft Corp. v. Intl Trade Comm’n*, 731 F.3d 1354, 1361-62 (Fed. Cir. 2013); *Certain Computers and Computer Peripheral Devices, and Components Thereof and Products Containing Same*, Inv. No. 337-TA-841, Comm’n Op. at 32 (Jan. 9, 2014).

Certain Subsea Telecomm. Sys., Inv. No. 337-TA-1098, Comm’n Op., at 39 (May 6, 2019).

Additionally, Roku cited dicta in *Certain Integrated Circuit Chips* to support its point. (CBr. at 74 (citing *Certain Integrated Circuit Chips and Prods. Containing the Same* (“*Certain Integrated Circuit Chips*”), Inv. No. 337-TA-859, Comm’n Op. at 47 (Aug. 22, 2014))).).

However, that investigation involved the application of subsection C and to what extent a nexus must be shown. The decision did not deal with the domestic industry requirement of “in the process of.” Roku’s domestic industry is entirely predicated on subsection B, which expressly requires an industry related to articles that practice the ’875 patent. Moreover, in the 859 investigation, the complainant had actual patent practicing products at issue. *Certain Integrated Circuit Chips* at 44 (“Each of these chips practices each of the domestic industry patent claims.”).

Similarly, in *Certain Non-Volatile Memory Devices* and *Certain Computers and Computer Peripheral Devices*, the complainant had actual patent practicing products—the issue was that commercialization had not occurred yet. (CBr. at 75 (citing *Certain Non-Volatile Memory Devices and Prods. Containing Same*, Inv. No. 337-TA-1046, Comm’n Op. at 41-42 (Oct. 26, 2018); *Certain Computs. and Comput. Peripheral Devices*, Inv. No. 337-TA-841, Comm’n Op. at 37, 40 n.30 (Jan. 9, 2014)). This is very different from the present situation where no article exists, and Roku has not sufficiently taken the necessary development steps.

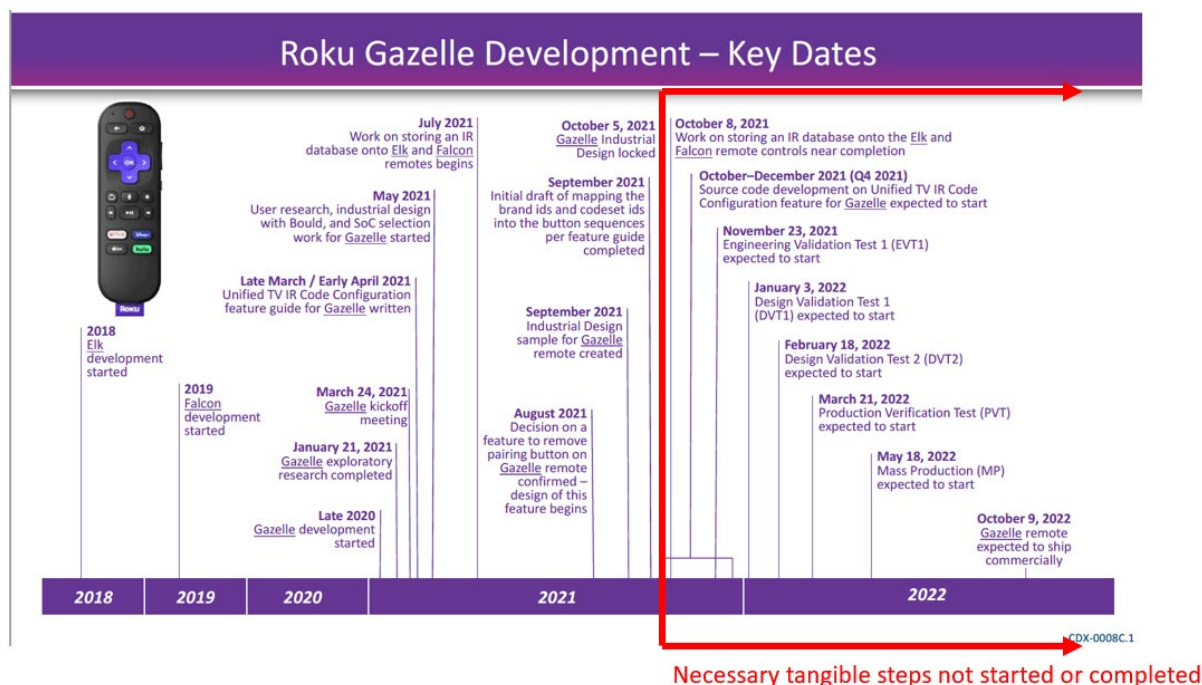
The Federal Circuit and the Commission require a complainant to prove the technical prong requirement based on an actual article that allegedly practices the patent in question. *See, e.g., Microsoft Corp. v. ITC*, 731 F.3d 1354, 1361-62 (Fed. Cir. 2013); *Certain Computs. and Comput. Peripheral Devices*, Inv. No. 337-TA-841, Comm’n Op. at 32 (Jan. 9, 2014). Roku was required to show that it was in the process of establishing a domestic industry at one of two critical deadlines: the date Roku filed its Complaint (April 8, 2021) or the fact discovery cutoff date (October 8, 2021), which is failed to do. *See Digital Cameras*, ID at 48 (Aug. 17, 2018).

b) Roku Has Not taken the Necessary Tangible Steps to Establish an Industry

It is Roku's burden to show that it has taken "the necessary tangible steps to establish such an industry" and there is a "significant likelihood that the industry requirement will be satisfied in the future." Roku has failed to meet its burden. (Tr. (Herrington) at 789:20-790:3, 791:17-792:3, 797:15-25, 809:13-16.).

It is undisputed that both at the filing of the Complaint (April 8, 2021), and at the close of fact discovery (October 8, 2021), Roku still had many necessary steps to take in the future. These steps are not merely for the commercialization of an existing prototype: Roku still had many fundamental development steps to take as of the close of fact discovery. (*See, e.g.*, CBr. at 67 (discussing future formal milestones that Roku must take).). As shown below in Figure 5, which Roku provided to present "key dates" in the development of the Gazelle, these fundamental steps included, *inter alia*: (i) "[s]ource code development on Unified TV IR Code Configuration feature for Gazelle," which Roku expected to start in October-December 2021 (Q4 2021); (ii) an "Engineering Validation Test" expected to start on November 23, 2021; (iii) "Design Validation Test[s]" expected to start on January 2, 2022 and February 18, 2022; and (iv) a "Production Verification Test" expected to start on March 21, 2022. (CDX-0008C.0001.). All of these steps were projected to begin *after* October 8, 2021.

Figure 5: Gazelle Development Timeline



(RRBr. at 60 (citing CDX-0008C.0001 (annotated)).).

As shown below for at least the following claim limitations, Roku has not taken the necessary tangible steps to establish an industry. The test for in the process of establishing a domestic industry requires that Roku take the “the necessary tangible steps” not “some necessary tangible steps.” In the context of the ’875 patent, the necessary tangible steps require development of hardware and software, neither of which Roku has created.

i. “Processor” and “Memory”

Claims 1-4, 8, and 10 require a processor and a memory. (JX-0001 at cls. 1-4, 8, 10; Tr. (Houh) at 673:24-674:2; RDX-0001C.0045. Similarly, the construction for claim 14’s limitation of “means for scanning through remote control code-sets” require a processor. (JX-0001 at cl. 14; Order No. 32 at 9.).

[REDACTED] that will

allegedly include a processor and memory. (JX-0478C (Marino Dep. Tr.) at 24:7-14, 25:17-26:21.). Mr. Peters confirmed that [REDACTED] (Tr. (Peters) at 107:13-15.). However, by the close of fact discovery, Roku had not received [REDACTED] [REDACTED] (Tr. (Houh) at 674:3-10; Tr. (Peters) at 110:1-4; JX-0839C (Roku's Response to RFA No. 382) at 196.). Furthermore, Roku had not received [REDACTED] [REDACTED] (JX-0889C (Soh Dep. Tr.) at 44:11-45:5; Tr. (Houh) at 674:11-13; Tr. (Peters) at 110:5-11.). By the close of fact discovery, Roku had not made a Gazelle with a processor or memory. (Tr. (Houh) at 674:14-16.). Accordingly, Roku has not shown that the Gazelle will practice the processor or memory elements of the '875 patent. (Tr. (Houh) at 674:17-20.).

ii. "Transmitter"

Claims 1-4, 8, and 10 require a "transmitter." (JX-0001 at cls. 1-4, 8; Tr. (Houh) at 674:21-24.). Roku has not created a Gazelle remote with a transmitter. (Tr. (Houh) at 674:25-675:2.). Roku's non-final industrial design did not include any electronics. (JX-0478C (Marino Dep. Tr.) at 105:4-9, 105:25-106:8; CX-1153C; Tr. (Peters) at 102:1-22; CX-1153C; RDX-0029C.0002.). Roku has also not created [REDACTED] [REDACTED] (Tr. (Peters) at 110:5-11; *see also* Tr. (Houh) at 674:11-12.). Thus, Roku has failed to show that the Gazelle will practice this limitation. (Tr. (Houh) at 675:3-5.).

c) Roku Has Not Shown a Significant Likelihood the Technical Prong Will Exist in the Future

Roku's demonstrated behavior of promising a product, and breaking that promise, undermines Roku's latest promise that it will release the Gazelle product in October of 2022. In

order to gain institution of this Investigation based solely on a domestic industry in the process of, Roku's Director of Financial Planning and Analysis, Mr. Kevin Bright, submitted a sworn declaration with the Complaint that stated Roku "plans to release and sell the [Gazelle remote] later [REDACTED]"³⁴ (Doc. ID No. 739355 (Ex. 5C to Compl.) at ¶ 59; Tr. (Bright) at 154:22-155:4, 155:20-156:2.). Mr. Bright, while a financial witness, told the Commission that he knew this to be true because he was "familiar with Roku's products . . . and the investments that Roku has made to develop, improve and sell its products." (Doc. ID No. 739355 (Ex. 5C to Compl.) at ¶ 5.).³⁵ However, as discussed above in Section IV.D, [REDACTED]
[REDACTED] This pattern of promising a release date under oath, then allowing other products take priority, suggests that Roku has not prioritized the Gazelle and it still is uncertain that the remote will ever exist, let alone by October 2022.

E. Invalidity

1. Legal Standard

A patent is presumed valid. *See* 35 U.S.C. § 282; *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95 (2011). A respondent who has raised patent invalidity as an affirmative defense has the burden of overcoming this presumption by clear and convincing evidence. *See Microsoft*, 564 U.S. at 95.

³⁴ When he testified during the Hearing on January 24, 2022, Mr. Kevin Scott Bright was Senior Director of Financial Planning and Analysis at Roku. (Tr. (Bright) at 121:19-122:2.). He holds a BBA in Accounting from the University of Michigan and an MBA in Finance from the University of Michigan. (CDX-0009C.0002.). Roku identified Mr. Bright as a fact witness to testify about matters relating to domestic industry products. (CPSt. at 2.).

³⁵ During the Hearing, Mr. Bright could not say under oath when the Gazelle would ever be released. (Tr. (Bright) at 159:16-19.).

a) 35 U.S.C. § 102 (Anticipation)

35 U.S.C. § 102 states:

A person shall be entitled to a patent unless –

...

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States;

...

(g)(2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

(35 U.S.C. § 102 (b), (g)(2) (pre-AIA)).

A determination that a patent is invalid as being anticipated under 35 U.S.C. § 102 requires a finding, based upon clear and convincing evidence, that each and every limitation is found either expressly or inherently in a single prior art reference. *See, e.g., Celeritas Techs. Inc. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998). Anticipation is a question of fact, including whether a limitation, or element, is inherent in the prior art. *In re Gleave*, 560 F.3d 1331, 1334-35 (Fed. Cir. 2009). The limitations must be arranged or combined the same way as in the claimed invention, although an identity of terminology is not required. *Id.* at 1334 (noting, “the reference need not satisfy an *ipsissimis verbis* test”); MPEP § 2131.

The “invention thereof by the applicant” in section 102(g) is determined based on conception, reduction to practice, and abandonment, suppression, or concealment. *See Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996). “[A] challenger ... has two ways to prove that it was the prior inventor: (1) it reduced its invention to practice first ... or (2) it was the first party to conceive of the invention and then exercised reasonable diligence in reducing that invention to practice.” *Fox Grp., Inc. v. Cree, Inc.*, 700 F.3d 1300, 1304 (Fed. Cir. 2012) (quoting *Mycogen Plant Sci., Inc. v. Monsanto Co.*, 243 F.3d 1316, 1332 (Fed.Cir.2001)).

Conception requires that “an inventor must have formed in his or her mind ‘a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice’ ... and be ‘so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation.’” *Id.* (quoting *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228, 32 USPQ2d 1915, 1919 (Fed.Cir.1994), *cert. denied*, 516 U.S. 1070, 116 S. Ct. 771, 2d 724 (1996) (citations omitted)).

b) 35 U.S.C. §103 (Obviousness)

Under 35 U.S.C. § 103(a), a patent is valid unless “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made” to a person having ordinary skill in the art. 35 U.S.C. § 103(a). The ultimate question of obviousness is a question of law, but “it is well understood that there are factual issues underlying the ultimate obviousness decision.” *Richardson-Vicks*, 122 F.3d 1476, 1479 (Fed. Cir. 1997) (citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966)).

After claim construction, “[t]he second step in an obviousness inquiry is to determine whether the claimed invention would have been obvious as a legal matter, based on underlying factual inquiries including: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations of non-obviousness.” *Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1354 (Fed. Cir. 1999) (citing *Graham*, 383 U.S. at 17).

The existence of secondary considerations of non-obviousness does not control the obviousness determination; a court must consider “the totality of the evidence” before reaching a

decision on obviousness. *Richardson-Vicks*, 122 F.3d at 1483.

The Supreme Court clarified the obviousness inquiry in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007). The Supreme Court said:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson's-Black Rock* are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Following these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement. Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

* * *

The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way. In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends. Granting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility.

KSR, 550 U.S. at 417-19.

The Federal Circuit has since held that when a patent challenger contends that a patent is invalid for obviousness based on a combination of several prior art references, “the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill

in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so.”

PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007) (citations omitted).

The TSM³⁶ test, flexibly applied, merely assures that the obviousness test proceeds on the basis of evidence--teachings, suggestions (a tellingly broad term), or motivations (an equally broad term)--that arise before the time of invention as the statute requires. As *KSR* requires, those teachings, suggestions, or motivations need not always be written references but may be found within the knowledge and creativity of ordinarily skilled artisans.

Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1365 (Fed. Cir. 2008).

c) 35 U.S.C. § 101 (Patentable Subject Matter)

Section 101 of the Patent Act states: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. In *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014), the Supreme Court explained that the application of section 101 requires courts to “distinguish between patents that claim the ‘buildin[g] block[s]’ of human ingenuity and those that integrate the building blocks into something more.” *Id.* at 2354 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.Ct. 1289, 1294 (2012)). To make this distinction, courts must first “determine whether the claims at issue are directed to a patent-ineligible concepts,” such as the “laws of nature, natural phenomena, and abstract ideas,” i.e., *Alice* step one. *Id.* at 2355 (citing *Mayo*, 132 S.Ct. at 1296-1297). If so, courts must then examine the elements of the claim to

³⁶ TSM is an acronym that stands for teaching, suggestion, motivation.

determine whether it contains an “inventive concept” sufficient to “transform” the claimed abstract idea into a patent-eligible application,” i.e., *Alice* step two. *Id.* “[W]hether a claim recites patent eligible subject matter is a question of law which may contain underlying facts.” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018). “Any fact . . . that is pertinent to the invalidity conclusion must be proven by clear and convincing evidence.” *Id.* (citation omitted).

2. The Philips Remote Controls

a) Introduction

Respondents alleged the '875 patent is invalid as anticipated and obvious over remote controls that were sold in the U.S. together with their user manuals, or over remote controls allegedly manufactured in the U.S. and not abandoned, suppressed, or concealed. (RBr. at 1-3, 11, 27-28, 30, 40.). The remote controls fall into three categories: (1) Philips; (2) RCA; and (3) LeapFrog remote controls. (RBr. at 1-3.).

Respondents have shown by clear and convincing evidence that the Philips and RCA remote controls are prior art and anticipate the claimed invention. However, the LeapFrog remote control is not prior art and does not invalidate the '875 patent. The claims are valid under 35 U.S.C. §§ 101 and 112.

Respondents grouped the Philips PMDVD6, Philips PM725S, Philips PM435S and Zenith ZN501S remote controls together and labeled them the “Philips Remote Controls.” (RBr. at 1-3, 11, 27-28.).

b) The Philips PMDVD6 Remote Control Is Prior Art

Respondents asserted the Philips PMDVD6 remote control as prior art against claims 1-5, 8-10 and 14 of the '875 patent. (RBr. at 10-26.). The Philips PMDVD6 remote control is a

universal remote control that was on sale and sold together with a user manual as a kit (“the PMDVD6 remote control”), [REDACTED]

[REDACTED] (RX-0720 at 0000002, Ex. 4 (showing the PMDVD6 remote control with ASIN number); RX-121C (showing sales date by ASIN).). Philips confirmed sale in the United States of the PMDVD6 remote control by [REDACTED] (RX-0206C at para. 5.). By being on sale or sold in the United States more than one year prior to the U.S. filing date of the ’875 patent, the PMDVD6 remote control is prior art under 35 U.S.C. § 102(b). Roku did not dispute the PMDVD6 remote control is prior art. (CRBr. at 5-10; CPBr. at 54-55.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

c) The Philips PMDVD6 Remote Control Anticipates Limitations 1(pre), 1(a), 1(b) and 1(c)(2) of Claim 1

The PMDVD6 remote control anticipates the asserted claims. Limitations 1(pre), 1(a), 1(b) and 1(c)(2) are not disputed. (RBr. at 12, 18-19; CRBr. at 4-10.). The PMDVD6 remote control, as Respondents explained during the Hearing, discloses a remote control product and a method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter. (RBr. at 12 (citing JX-230.0003 (user manual); RX-0812 (showing keyboard); RX-0736 (showing processor); RX-0759 (showing memory); RX-0733 (showing transmitter); RPX-0119 (PMDVD6 product); RDX-0001.0064; Tr. (Houh) at 686:1-16).). The disclosed method includes the limitations:

1(a) entering, via the keyboard and processor, a configuration mode. (RBr. at 12 (citing RDX-0001.0065; JX-0230.0006-7 (describing to “press and hold the CODE SEARCH button” as entering a configuration mode); Tr. (Houh) at 686:17-687:13).).

1(b) accepting, via the keyboard and processor, an identifier-entry. (*Id.* (citing RDX-

0001.0066; JX-0230.0006 (describing at step 3 of “Direct Code Entry” entering a “3 digit code,” which encompasses the claimed “single remote control code-set” as the identifier-entry); *see also infra* explanation for limitation 1(c)(2); JX-0230.0007 (describing at step 4 of “Code Search by Brand” entering a “numeric button (0-9),” which encompasses the claimed “brand-identifier” as the identifier-entry); Tr. (Houh) at 687:14-688:5.).

1(c)(2) in case that the identifier-entry is a code-set identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set. (RBr. at 18-19 (citing JX-0230.0006 (describing “Direct Code Entry” which encompasses a single remote control code-set and not a brand-identifier at step 4, pressing “CHANNEL UP” which causes sending as claimed); RDX-0001.0071; Tr. (Houh) at 703:18-21, 705:2-14 (describing that under Roku’s infringement theory, there are brands in the code list that do not appear in the brand list, thus disclosing the claimed “single remote control code-set” that is not a brand-identifier).).

Roku did not dispute these limitations. (CRBr. at 5-8; CPBr. at 54-55.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Respondents have shown by clear and convincing evidence that limitations 1(pre), 1(a), 1(b) and 1(c)(2) are anticipated.

d) The Philips PMDVD6 Remote Control Anticipates Limitations 1(c) and 1(c)(1) of Claim 1

The main dispute is over limitations 1(c) and 1(c)(1), reproduced below for convenience.

Claim 1. ...

[1(c)] scanning, via the processor and memory, th[r]ough remote control code-

sets in a database stored in the memory of the Remote Control, wherein the step of scanning comprises:

[1(c)(1)] in case that the identifier-entry is a **brand-identifier** that identifies a brand,

- (i) **iterating, via the processor and memory**, through the remote control code-sets corresponding to the brand and
- (ii) testing said remote control code-sets
by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or more specific control code functions of a corresponding remote control code-set, ...

(JX-0001.0011 (emphasis and paragraph breaks added)).

At the heart of the dispute is whether iteration includes user-iteration or software-iteration. In other words, does iteration include a user pressing a key, or does iteration exclude a user pressing a key on the remote control.

i. Respondents' Arguments

Respondents contended the PMDVD6 remote control discloses limitations 1(c) and 1(c)(1). (RBr. at 13 (citing RDX-0001.0067-71; Tr. (Houh) at 688:6-696:16, 698:7-705:14), 18 (citing RDX-0001.0067-70; Tr. (Houh) at 688:6-690:12; JX-0230.0007-8)). The claim requires “scanning, via the processor and memory” through “remote control code-sets in a database stored in the memory of the Remote Control” and “iterating, via the processor and memory, through the remote control code-sets.” (JX-0001.0011.). Respondents explained that “Code Search by Brand” scans through the code-sets in the memory by “Press[ing] the CHANNEL UP button” or by “press[ing] the CHANNEL DOWN button” in an iterative fashion until a code-set successfully changes the channel. (RBr. at 13, 18 (citing JX-0230.0007-08; RDX-0001.0067; Tr. (Houh) at 688:6-690:12); RPBr at 45-46.). In particular, step 5 of the user manual states: “Press the CHANNEL UP button ... repeatedly until the device to be controlled changes channel ... If you accidentally overshoot the code required, press the CHANNEL DOWN button to backtrack

through the library until the device changes channel. Pressing CHANNEL UP changes direction to forward again.” (JX-0230.0007.). In other words, step 5 describes a “library” of code-sets that are scanned or iterated through in a forward or backward direction until the proper code is found, resulting in a remote control that works properly.

Respondents explained that the scanning is “via the processor and memory” as required in the claim because pressing the “Channel Up” button requires use of the processor and memory. (RBr. at 13.). Respondents’ expert, Dr. Houh, explained:

actual iteration is being done by the processor and memory. That’s what computer code does when you write iteration loops. They keep track of where you are in the iteration. And there are plenty of external events that can pause any software, but the iteration loop is still done by the processor regardless of whether...it’s waiting for user interaction or not.

(Tr. (Houh) at 923:15-21).).

ii. Roku’s Arguments

Roku argued that the 1(c) and 1(c)(1) limitations are not met by the PMDVD6 remote control because a user must press a key repeatedly. (CRBr. at 5.). In the PMDVD6 remote control, “it is the *user* who presses a key repeatedly, until the device responds to the key press.” (CRBr. at 5 (emphasis in original).). Roku contended “the terms ‘scanning through’ and ‘iterating through’ cannot be squared with a user pressing a key multiple times.” (*Id.* at 6 (citing Tr. (Balakrishnan) at 837:22-840:11; CDX-0006C.0004).).

Turning to the specification to understand the claim language, Roku’s expert contended the ’875 patent requires the software to iterate through the code-sets, not the user, by referring to steps 6-11 of Figure 5 of the ’875 patent. (Tr. (Balakrishnan) at 842:6-20.). The corresponding description in the patent to limitation 1(c) states “the software iterates through all these codesets (step 6).” (JX-0001.0009 at 6:32-33.).

Roku's expert explained that by pressing a key repeatedly in the PMDVD6 remote control, iterating is "not being done by the software, the iterating is being done by the human." (Tr. (Balakrishnan) at 844:20-21.).

If the user doesn't press that channel down, it doesn't go to the next one, which, hence, my point that it's not the software doing the iteration of going through the loop. It's the user saying next, next, next, next. And if the software does not get that keypress saying next, it doesn't go to the next one, so it's not doing the iteration, it's the user doing the iteration.

(Tr. (Balakrishnan) at 845:6-13.).

iii. Limitations 1(c) and 1(c)(1) Do Not Exclude User Input

Respondents have the convincing argument. The claims do not exclude user input during the scanning and iterating. As argued by Roku, "it is the *user* who presses a key repeatedly, until the device responds to the key press." (CRBr. at 5 (emphasis in original)). However, when "the device responds," it does so via its processor and memory. Roku's expert, Dr. Balakrishnan, admitted iteration includes using the processor and memory and "[i]t is not iterating on its own." (Tr. (Balakrishnan) at 893:9-17.). Furthermore, Dr. Balakrishnan acknowledged that the "software and memory is involved" each time the user presses a key. (*Id.* at 895:7-13.). In addition, a "library" of code-sets is stored in a memory of the code-sets so that iteration occurs when a user repeatedly presses a key. (JX-0230.0007 (stating to "backtrack through the library until the device changes channel" at step 5.). The user does not enter an identifier entry or code-set with each keypress on the PMDVD6 remote control. This necessarily requires that the memory is accessed, and the iterating is performed via the processor and memory.

That user input is not excluded from the claimed invention is consistent with the claim construction for step "ii." The testing step limitation at step "ii" was construed to not require user intervention. (*Markman* Order II at 4-6.). But neither does the claim limitation exclude

user intervention.

As Respondents pointed out, Roku is attempting to add a limitation—it is “only” the software that “iterates through all these code-sets” to the exclusion of user input—into the claims. (RBr. at 13-14; CRBr. at 6; *see, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments”) (citations omitted).). It is improper to read a limitation from the specification into the claim, except in the case of lexicography or disavowal. *See, e.g., Thorner v. Sony Comp. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012); *Hill-Rom Services, Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). These claim limitations are not defined in the specification, and there is no clear disavowal of claim scope that would limit the scanning and iterating steps to require only “software” iteration to the exclusion of user input. (RBr. at 13 (citing RDX-0001.0068; Tr. (Houh) at 691:12-17 (“the word only is not in the claim”), 923:3-8; 923:23-924:1).). As Respondents explained, the “user just provides input that allows the software to continue at certain points in time.” (Tr. (Houh) at 924:7-8.). Thus, adding the limitation excluding user input is not warranted.

Accordingly, the PMDVD6 remote control discloses limitations 1(c) and 1(c)(1) and anticipates claim 1.

e) The Philips PMDVD6 Remote Control Renders Obvious Limitations 1(c) and 1(c)(1) of Claim 1 When Interpreted to Exclude User Input

Respondents argued in the alternative, that if the claims are interpreted to require only software iteration, without input from the user, the limitations are obvious. (RBr. at 17-18.).

Respondents contended, *supra*, that when a user presses a key continuously, it is the

software conducting the iteration. Such continual pressing, as an alternative to a user pressing a key repeatedly, is discussed as prior art in the '875 patent. (JX-0001.0007 at 1:62-63, 2:4-5 (stating in the background of the invention, “the user presses a button (or releases a button he was holding)” as disclosed in U.S. Patent No. 6,344,817 B1.). Respondents also explained that keeping a certain key pressed was well-known. (Tr. (Houh) at 692:7-9.). Respondents explained that “some of these code sets were probably hundreds of code sets. So if you’re scanning through, you have to press that a hundred times or more potentially. It would be very repetitive. So pressing and holding, it would be easier for the user[.]” (Tr. (Houh) at 925:16-20).).

Respondents argued “it would have been obvious to a person of ordinary skill to replace a user pressing a key multiple times with a user keeping a button pressed because a person of ordinary skill would have been motivated to make setup easier for the user by requiring fewer key presses and to help avoid repetitive stress injury.” (RBr. at 17-18 (citing Tr. (Houh) at 702:15-703:17).).

Roku’s expert acknowledged that it is easy to write the software code to make the change for keeping a key pressed through iteration. (Tr. (Balakrishnan) at 850:17-19).). However, Roku argued that the modification to keep the key continually pressed would not have been obvious because “there is a substantial difference” between that and repeated pressing of a key. (CRBr. at 7.). Roku argued that pressing a key continuously makes the process easier to use is an object of the invention, and as such constitutes improper hindsight bias. (*Id.* (citing *Insite Vision Inc. v. Sandoz, Inc.*, 783 F.3d 853, 859 (Fed. Cir. 2015))).).

There is no dispute that the modification for continual pressing of the key is known and within the level of skill of one of ordinary skill in the art. (JX-0001.0007 at 1:62-63, 2:4-5; Tr. (Balakrishnan) at 850:17-19).). The motivation for the modification of the PMDVD6 remote

control is that it makes the remote control easier to setup.

The hindsight bias Roku identified is not persuasive. The '875 patent, as a whole, is directed to software programming to make the remote easier to use, that is, combing through all the possible code-sets and brand-identifiers to successfully program a remote. The object of the invention is not to limit the number of keystrokes while the software is scanning to make the remote control easier to program. Hindsight bias would be present if the patent guided one to reduce the number of keystrokes to make the remote control easier to use, or if the patent stated combining code-sets and brand-identifiers is enabled or made easier by changing the number or style of pressing the keys. Therefore, the hindsight bias Roku asserted is inapposite: the concept of “ease of use due to limited keystrokes” is different than the teachings of the '875 patent, that of “ease of use from combining types of entry-identifiers.”

Moreover, the proposed modification is not improper hindsight because it uses knowledge within the level of ordinary skill at the time the invention was made. *Application of McLaughlin*, 443 F.2d 1392, 1395 (C.C.P.A. 1971) (explaining hindsight reasoning may be used because “[a]ny judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper.”). The proposed modification uses knowledge available in the prior art because Dr. Balakrishnan admitted that “simple software processing changes” are within the scope of one skilled in the art. (Tr. (Balakrishnan) at 850:10-20).). Therefore, improper hindsight bias is not present in Respondents’ obviousness argument.

Making the remote easier to use by enabling continual pressing of a key is adequate

motivation to render claim 1 obvious under 35 U.S.C § 103 in the event limitations 1(c) and 1(c)(1) are interpreted to exclude user input.

f) The Philips PMDVD6 Remote Control Anticipates or Renders Obvious Claims 2-5, 8-10 and 14

Claims 2-3 are not in dispute. Respondents explained how pressing and releasing the MUTE button on the remote control encompasses user approval and installation, as in the context of claims 2-3. (RBr. at 19 (citing JX-0230.0007; RDX-0001.0072; Tr. (Houh) at 705:15-706:18.). Roku failed to provide any argument other than to rely on the validity of the base claim, claim 1. (CRBr. at 8; CPBr. at 55.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Claim 4 is anticipated by the PMDVD6 remote control for the same reasons as claim 1. (RBr. at 19-25.). Limitations 4(pre), 4(a), 4(b) are not in dispute. (RBr. at 20; CRBr. at 8-10; CPBr. at 55-56.). Respondents explained how pressing the CHANNEL UP button encompasses the sending step of 4(a), and pressing the MUTE button encompasses the checking step of 4(b). (RBr. at 20 (citing JX-0230.0007; RDX-0001.0073; Tr. (Houh) at 707:18-708:6).).

Limitation 4(c) is in dispute. Respondents contended that “enabling” test keys as cited is disclosed by pressing CHANNEL UP or CHANNEL DOWN to determine whether the device works. (RBr. at 20 (citing JX-0230.0007 (describing “Press...until the device to controlled changes channel”); RDX-0001.0074; Tr. (Houh) at 709:1-10 (testing when “the volume did go up and down and ... the channel did go up and down”), 695:8-14 (demonstrating testing keys when pressing CHANNEL UP or CHANNEL DOWN)).).

Roku contended this is the same limitation relied upon to disclose limitation 1(c)(1) and not “in case of a user reaction.” (CRBr. at 9.). Roku argued that limitation 4(c) is in addition to

claim 1(c)(1). (CPBr at 9.). Roku further argued that source code or additional evidence should have been presented to show the 4(c) limitation. (CPBr. at 9-10.). Finally, Roku urged that limitation 4(c) is inconsistent with the preferred embodiment and contains additional elements from the Figure 6 embodiment that discloses additional testing. (CRBr. at 10.).

Roku's arguments are unavailing. Respondents demonstrated that the limitation was explained in the user manual and the remote control works as intended by testing of the remote by adjusting the volume or changing the channel. Testing to adjust volume/channel occurs when the user has approved the code, and the user tests to ensure the remote control works. This encompasses the limitation of 4(c) of "in case of a user reaction, enabling ...test keys" of the user-approved code-set because testing is conducted, as Respondents explained, when setting up the remote control. (RBr. at 23; Tr. (Houh) at 695:9-14 (pushing keys as "trying the various functions to see if they work").). Additional evidence of testing is not required because Respondents demonstrated how testing the remote control works. Moreover, the claim does not require a specific testing step or testing results.

Respondents also presented arguments about multiple keystrokes and repeating the process to "enable" testing. (RBr. at 23-24; RDX-0001.0122.). Respondents explained that the code-sets, on "the second time you went through it, it started at the next code-set in the list." (RBr. at 23 (citing Tr. (Houh) at 694:3-696:16).). Roku argued that Respondents' demonstration could lead to the possibility of drawing questionable inferences, without additional evidence such as an explanation of source code, which was not provided. (CRBr. at 10.). Roku's argument is persuasive in that Respondents gave an inadequate explanation. While Respondents may be correct, other inferences could be drawn from Respondents' demonstration such that a user could start with different keystrokes within a list of code-sets.

The claim limitation requires “testing” but provides no mechanism to test. “Enabling ... test keys” does not require any further software programming because the claim does not require testing to have any special effect other than to ensure the remote control works as intended, or that other keys on the remote control function as intended. Limitations such as testing as depicted in Figure 6, as Roku contended, may not be properly imported to limit the claim language. *Hill-Rom* at 1371 (Fed. Cir. 2014) (explaining limitations from specification embodiments are not read into the claims). Requiring a particular type of testing is not consistent with the language of limitation 4(c). Accordingly, limitation 4(c) is anticipated by the PMDVD6 remote control because testing keys on a remote control to ensure they work and perform the intended function is part of setting up a remote control. Alternatively, testing in the context of claim 4 would have been obvious to one with ordinary skill in the art because it is routine as a part of setting up a remote control.

Claims 5 and 8-10 are anticipated by the PMDVD6 remote control. (RBr. at 25-26 (explaining device type entry by a desired mode button, a numbering convention, wild card code of zero, and a memory storing instructions to be executed by the processor (citing JX-0230.0003, -0006-8; RDX-0001.0076-79; Tr. (Houh) at 712:1-713:19).). Roku did not dispute these claims other than to rely on arguments with respect to claim 1. (CRBr. at 8; CPBr. at 55.). Roku waived any argument on this issue that it did not raise pursuant to Ground Rule 10.1. Accordingly, claims 5 and 8-10 are anticipated by the PMDVD6 remote control.

Claim 14 is anticipated for the same reasons claim 1 is anticipated. Roku did not dispute claim 14 other than to argue claim 1 is not anticipated. (CRBr. at 10; CPBr. at 56.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Accordingly, claim 14 is anticipated by the PMDVD6 remote

control.

g) The Philips PM725S Remote Control Is Prior Art and Anticipates or Renders Obvious the Asserted Claims of the '875 Patent

Respondents have proven by clear and convincing evidence that the Philips PM725S remote control and its user manual were sold together as a kit (“the PM725S remote control”), more than a year prior to application of the '875 patent in the United States. (RBr. at 27 (citing RX-0176; RX-0177; RX-0178; RX-0206C; RX-0838; JX-0344).). Roku did not dispute the PM725S remote control is prior art. (CRBr. at 10-11; CPBr. at 56.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. The PM725S remote control is prior art under 35 U.S.C. § 102(b).

Roku did not dispute that the PM725S remote control discloses the asserted claims other than to state it is substantially the same as the PMDVD6 remote control. (CRBr. at 10-11; CPBr. at 56.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Accordingly, for the same reasons the PMDVD6 remote control anticipates or renders obvious the asserted claims, so too does the PM725S remote control.

h) The Philips PM435S Remote Control Is Prior Art and Anticipates or Renders Obvious the Asserted Claims of the '875 Patent

Respondents have proven by clear and convincing evidence that the Philips PM435S remote control and its user manual were sold together as a kit (“the PM435S remote control”), more than a year prior to application of the '875 patent in the United States. (RBr. at 28 (citing RX-0181; RX-0206C; RX-0123; RX-0808; JX-0345).). Roku did not dispute the PM435S remote control is prior art. (CRBr. at 11; CPBr. at 56.). Thus, Roku has waived, abandoned or

withdrawn any argument Roku may try to make on this issue under Ground Rules 7.2 and 10.1.

The PM435S remote control is prior art under 35 U.S.C. § 102(b).

Roku did not dispute that the PM435S remote control discloses the asserted claims other than to state it is substantially the same as the PMDVD6 remote control. (CRBr. at 11; CPBr. at 56.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Accordingly, for the same reasons the PMDVD6 remote control anticipates or renders obvious the asserted claims, so too does the PM435S remote control.

i) The Zenith ZN501S Remote Control Is Prior Art and Anticipates or Renders Obvious the Asserted Claims of the '875 Patent

Respondents have proven by clear and convincing evidence that the Zenith ZN501S remote control and its user manual were sold together as a kit (“the ZN501S remote control”), more than a year prior to application of the '875 patent in the United States. (RBr. at 30 (citing RX-0121C; RX-0170; RX-0180; RX-0206C; RX-0822; JX-0347).). Roku did not dispute that the ZN501S remote control is prior art. (CRBr. at 11; CPBr. at 56-57.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. The ZN501S remote control is prior art under 35 U.S.C. § 102(b).

Roku did not dispute that the ZN501S remote control discloses the asserted claims other than to state it is substantially the same as the PMDVD6 remote control. (CRBr. at 11; CPBr. at 56-57.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Accordingly, for the same reasons the PMDVD6 remote control anticipates or renders obvious the asserted claims, so too does the ZN501S remote control.

3. The RCA Remote Control

Respondents asserted that the RCA RCR815 remote control as prior art to claim 1 of the '875 patent.³⁷ (RBr. at 30-37.).

a) The RCA RCR815 Remote Control Is Prior Art

Respondents have proven by clear and convincing evidence that the RCA RCR815 remote control and its user manual were on sale together as a kit (“the RCR815 remote control”), more than a year prior to application of the '875 patent in the United States. (RBr. at 32 (citing RX-0720 at AMZ-UE-SUB_00000002, -48-49 (showing ASIN number and “Date First Available” [REDACTED] by declaration); JX-0346 (showing RCR815 user manual); Tr. (Jonathan Veres)³⁸ at 506:6-20, 507:25-509:1).). Roku did not dispute that the RCR815 remote control is prior art. (CRBr. at 12-17; CPBr. at 57-58.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. The RCR815 remote control is prior art under 35 U.S.C. § 102(b).

b) The RCR815 Remote Control Anticipates Limitations 1(pre), 1(b) and 1(c)(2) of Claim 1

The RCR815 remote control anticipates the asserted claim. The RCR815 remote control, as evidenced by the user manual and demonstrated by Respondents during the Hearing, discloses:

1(pre) a method for setting up a Remote Control that includes a keyboard, a processor, a

³⁷ Claims 2-5, 5-10 and 14 were not asserted in Respondents’ Initial Post-Hearing Brief, and thus are deemed waived under Ground Rule 10.1. (RPBr. at 30-37.). The RCA RCR612 remote control was not asserted in Respondents’ Initial Post-Hearing Brief. (RBr. at 30.). Invalidity is deemed waived under to Ground Rule 10.1. for the RCR612 remote control.

³⁸ When he testified during Hearing on January 25, 2022, Mr. Jonathan Veres was the Executive Director of Software Architecture at Universal Electronics Inc. (RPSt. at 3.). Respondents identified Mr. Veres as a fact witness to testify about the operation of UEI’s products. (*Id.*).

memory, and a transmitter. (RBr. at 32 (citing JX-0346.0004 (explaining “Brand Code Search and Entry” in the RCA user manual); RX-0817 (showing the remote control product); RX-0722 (showing transmitter, processor and memory); RPX-0122 (remote control product); RDX-0001.0085; Tr. (Houh) at 718:10-23).). The disclosed method includes the limitations:

1(b) accepting, via the keyboard and processor, an identifier-entry. (RBr. at 35 (citing JX-0346.0004 (describing to press the “appropriate brand code key (Numbers (0-9)” at step 7 of “Brand Code Search and Entry”); JX-0346.0005 (describing to “enter the four-digit code” at step 4 of “Direct Code Entry”); RDX-0001.0089; Tr. (Houh) at 723:13-25).).

1(c)(2) in case that the identifier-entry is a code-set identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set. (RBr. at 37 (citing RDX-0001.0092; JX-0346.0047 (listing television codes by “Brand Code List” and “TV Codes”); Tr. (Houh) at 727:3-17 (explaining that a brand-id, such as “Admiral” in the “TV Codes” list of JX-0346.0047, does not appear in the “Brand Code List,” thus showing a code-set not pointed to by a brand identifier).).

Roku did not dispute that the RCR815 remote control anticipates limitations 1(pre), 1(b) and 1(c)(2). (RBr. at 32-37; CBr at 11-16; CPBr. at 57-58.). Thus, any argument Roku may try to make on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1. Limitations 1(a), 1(c) and 1(c)(1) are in dispute.

c) The RCR815 Remote Control Anticipates Limitation 1(a) of Claim 1 When Interpreted Consistently with the Adopted Claim Construction

Respondents offered alternative theories on limitation 1(a), depending on whether the

claims are limited to a single configuration mode or not. However, the claims have been construed to not require a single configuration mode. (*Markman* Order II at 2.).

Respondents contended that the RCR815 remote control discloses limitation 1(a) by stating as the first step for the user to “3. Press and hold the component key you wish to program” for both the “Brand Code Search and Entry” method and the “Direct Code Entry” method, as shown below in Figure 6 and Figure 7. (RBr. at 33 (citing RDX-0001.0086-88; JX-0346.0004-5 (describing “Brand Code Search and Entry” method and the “Direct Code Entry” method in the user manual); Tr. (Houh) at 718:24-719:10).). Shown below in Figure 6 and Figure 7 are the “Brand Code Search and Entry” and the “Direct Code Entry” methods of programming the RCR815 remote control.

Figure 6: RCA User Manual “Brand Code Search and Entry” Method

Brand Code Search and Entry

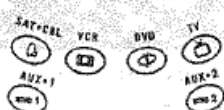
If your brand is listed in the Brand Code List (See Code Lists enclosed), you may be able to program your universal remote by searching through only the Code Lists for that specific manufacturer. Brand Code Search and Entry can be the quickest method to program your remote. If your brand is not listed in the Brand Code List, use one of the other programming methods.

NOTE: Brand Code Search and Entry is supported for TV, VCR, DVD and SAT/CBL brands. You cannot use the Brand Code Search method for AUDIO, DVR and HDTV.

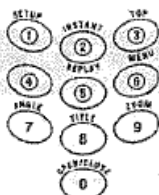
Follow these instructions to program your remote using the Brand Code Search and Entry method.



TIP: To exit without saving at any point in the Brand Code Search, press and release the **CLEAR** key.



1. Manually turn on the component you want the remote to control.
2. Locate the Brand Codes in the Code Lists.
3. Press and hold the component key you wish to program. The illuminated **ON-OFF** key turns on and remains on.
4. While holding the component key down, press and hold the **ON-OFF** key. The illuminated **ON-OFF** key turns off.
5. After holding both keys down for three seconds, the illuminated **ON-OFF** key turns back on.



6. Release both keys. The illuminated **ON-OFF** key remains on.
7. Refer to the Brand Codes. Press and release the appropriate brand code key (Numbers 0-9), using the number keys. The illuminated **ON-OFF** key blinks once.

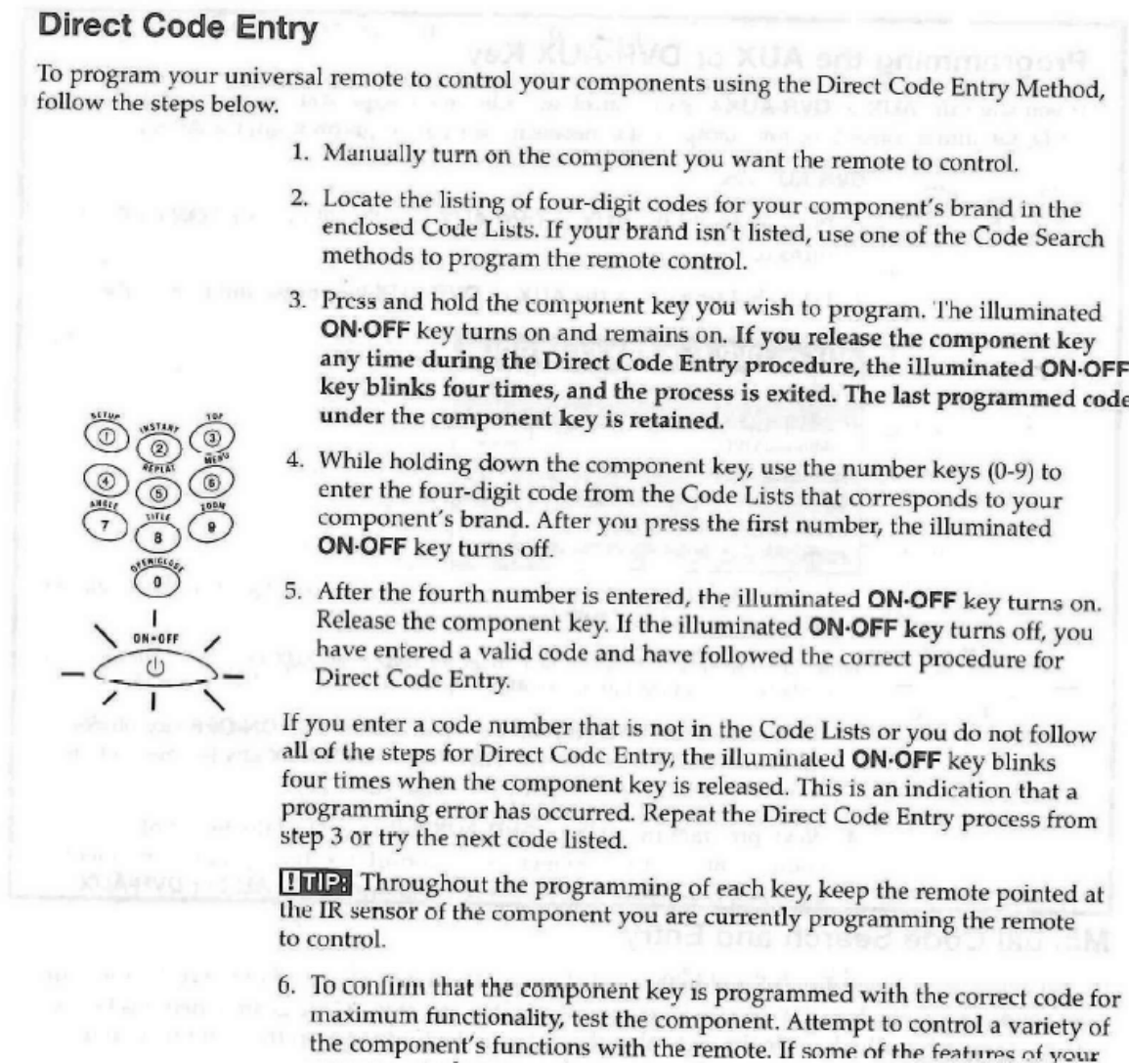
Note: If you do not press a valid Brand Code Search key, the illuminated **ON-OFF** key blinks four times and turns off. The last programmed code under that component key is retained.



8. Press and release the **ON-OFF** key repeatedly until your component turns off. Each time you press the **ON-OFF** key, the illuminated **ON-OFF** key blinks, and the next code is sent. The Brand Code Search begins with the first code in the chosen brand list for that component and cycles through

(JX-0346.0004 (showing excerpt of “Brand Code Search and Entry” method and Step 3 “Press and hold the component key you wish to program”).).

Figure 7: RCA User Manual “Direct Code Entry” Method



(JX-0346.0005 (showing excerpt of “Direct Code Entry” method and Step 3 “Press and hold the component you wish to program”).).

Respondents' expert, Dr. Houh, explained that there “are slightly different sequence of keypresses ... to get to the point where the user can then enter the brand-id or the code-set-id” for the “Brand Code Search and Entry” method and the “Direct Code Entry” method. (Tr. (Houh) at 719:11-16.). However, no matter which method is chosen, they begin with the same

step. (*Id.*).

Roku argued that “Direct Code Entry” requires the component key to remain pressed, thus exiting the configuration mode when the component key does not remain pressed. (CRBr. at 13-14 (citing JX-346.0005; CDX-0006C.0010).). Thus, Roku argued, the RCR812 remote control has two configuration modes, whereas the claim requires a single configuration mode. (CRBr. at 14-15 (citing Tr. (Balakrishnan) at 855:19-857:9).).

Roku’s arguments are not convincing. The claim construction fails to limit the claim to a single configuration mode. (*Markman* Order II at 2.). More than one configuration mode may be used. Whether a key is held or released, at least one configuration mode is entered. Pressing different keys to execute the two (2) methods does not evidence the use of different configuration modes. They simply evidence different methods of entering code-sets (one requiring different keystrokes). However, even if Roku is correct that another configuration mode is entered, the claim limitation is still met because the claim has been construed to allow additional configuration modes.

Respondents also argued that the asserted claim is obvious. If the claims are construed to be limited to one configuration mode, Respondents contended that it would have been obvious to implement software changes and without undue experimentation to obtain a single configuration mode. (CBr. at 35.). However, Respondents did not present sufficient evidence that there would be a motivation to provide a single configuration mode in the RCR812 remote control. This argument need not be reached because under the adopted claim construction, limitation 1(a) is anticipated by the RCR815 remote control.

d) The RCR815 Remote Control Anticipates Limitations 1(c) and 1(c)(1) of Claim 1

Respondents contended these limitations are met, for example, by scanning using repeated pressing of the ON-OFF key. (RBr. at 35 (citing RDX-0001.0090-91; Tr. (Houh) at 724:1-725:8).). The dispute over limitations 1(c) and 1(c)(1) is the same as for the PMDVD6 remote control in that the RCR815 remote control requires user input. Accordingly, for the same reasons the PMDVD6 remote control anticipates or renders obvious claim 1, so too does the RCR815 remote control.

4. Leapfrog Remote Control

Respondents asserted the LeapFrog Baby DVD Remote Control (the “LeapFrog remote control”) against claims 1-5, 8-10 and 14 of the ’875 patent. (RBr. at 37-51; RPBr. at 60-66.).

a) The LeapFrog Remote Control Is Not Prior Art Under 35 U.S.C. § 102(g)(2)

Respondents asserted that the LeapFrog remote control as prior art under 35 U.S.C. § 102(g)(2) to the ’875 patent. Respondents argued that the LeapFrog remote control was conceived and reduced to practice in the United States before the “priority date” of the ’875 patent. (RBr. at 40.). Respondents relied on testimony by Mr. George Vergis and contended that Zilog, LeapFrog’s predecessor, and LeapFrog conceived of a remote control on or before on or before [REDACTED] based on a software version date shown on a “Functional Requirement Worksheet.”³⁹ (RBr. at 40 (citing JX-0348C.0041 (Functional Requirement Worksheet of the remote control); Tr. (Vergis) at 518:19-519:6).). A later version of the software (v.4.3, [REDACTED])

³⁹ When he testified during the Hearing on January 25, 2022, Mr. George Vergis was Director of Software Engineering at Universal Electronics, Inc. (Tr. (Vergis) at 511:8-512:2; RPSt. at 4.). Respondents identified Mr. Vergis as a fact witness to testify about the operation of UEI’s products, and the operation of the prior art such as the RCA RCR815, RCA612, or LeapFROG Baby DVD Remote. (RPSt. at 4.).

[REDACTED] allegedly corrected “typos and omissions.” (JX-0348C.0041 (listing versions and remarks about each version); Tr. (Vergis) at 517:18-21.).

Respondents asserted reduction to practice of the LeapFrog remote control because [REDACTED]

[REDACTED] (RBr. at 41 (citing Tr. (Vergis) at 536:16-537:24, 512:18-19, 548:16-549:2, 541:7-13).). Additionally, Respondents asserted a [REDACTED]

[REDACTED] (RBr. at 41 (citing JX-0845C

[REDACTED]; Tr. (Vergis) at 536:16-537:24; JX-0845C).).

Finally, Respondents asserted that there was a commercial sale of the LeapFrog remote control on [REDACTED], based on Amazon sales records. (RBr. at 41 (citing RX-0720 at -02-03, -58 (showing LeapFrog with ASIN number sold and declaration about first date of sale on Amazon); RX-0121C (showing ASIN numbers and [REDACTED] of the number corresponding to the LeapFrog remote control); RDX-0001C.0095; Tr. (Houh) at 732:19-733:1).). Respondents offered evidence of a commercial sale to prove the invention was not abandoned, suppressed, or concealed. (RBr. at 41.).

Roku argued that Respondents failed to provide sufficient evidence of conception and reduction to practice of a programmable remote control. (CRBr. at 17.). Roku argued that Respondents failed to provide evidence of “(1) who conceived the alleged prior invention, (2) where that alleged prior conception occurred (i.e., in India or the U.S.), (3) who reduced the invention to practice, (4) where the alleged reduction to practice occurred, and (5) any corroboration for the alleged reduction to practice in the U.S.” (CRBr. at 17.). Roku also

alleged that Respondents failed to provide testing evidence that the invention worked for its intended purpose, and therefore did not show reduction to practice prior to the '875 patent. (CBr. at 17-18; RPBr. at 60.).

Respondents have failed to prove by clear and convincing evidence invention prior to the '875 patent under 35 U.S.C. § 102(g)(2). Roku's arguments are correct that there was a failure of proof on such questions about who, what and where the alleged invention was conceived and reduced to practice. Moreover, different versions of the software were presented, v4.2 and v4.3, without adequate evidence that the "typos and omissions" did not affect the basic operation of the product so that the product worked for its intended purpose. Respondent's witness was impeached during the Hearing based on remarks he made during his deposition as to whether the deliverable included hardware or not. (Tr. (Vergis) at 541:7-542:10).). Testing data to show that the invention worked to any degree at all, much less for its intended purpose, was not offered. Accordingly, the LeapFrog is not prior art to the '875 patent based on the evidence of record.

b) The LeapFrog Remote Control Is Not Prior Art Under 35 U.S.C. § 102(b) for Claim 10

Respondents alleged that the sale or offer for sale of the LeapFrog ROM Mask is prior art under 35 U.S.C. § 102(b) for claim 10. (RBr, at 42.). Respondents argued that the ROM Mask had the required source code, and sale of the ROM mask "is tantamount to the sale or on sale of the ROM itself." (RBr. at 42.) Respondents also asserted that "delivery of the OTPs with the ROM microcontroller" is prior art under 35 U.S.C. § 102(b). (*Id.* (citing Tr. (Vergis) at 533:15-19).).

Roku argued that a ROM mask is a piece of film – an image – and not a sale or offer of sale of the product itself. (CRBr. at 21 (citing Tr. (Vergis) at 534:20-535:4).).

Respondents have failed to prove by clear and convincing evidence that the ROM Mask or the delivery of OTPs is prior art under 35 U.S.C. § 102(b). A mask is not the final product. A mask is simply used to manufacture the final product. The ROM Mask is used during manufacturing to produce the final product of a computer readable medium, but it is not the final product itself. Therefore, the ROM Mask cannot be a “computer readable medium” of claim 10.

Moreover, the alleged distinction between an OTP and a ROM microcontroller is not clear. Respondent’s witness explained that “the ROM part is the other method of getting a microcontroller.” (Tr. (Vergis) at 533:22-23.). Respondents’ witness explained an OTP and ROM are “identical in electrical and logical sense...they are interchangeable parts.” (Tr. (Vergis) at 549:14-18.). Therefore, the argument that “delivery of the OTPs with the ROM microcontroller” is prior art is confusing and not persuasive because OTPs and a ROM microcontroller are different parts. Respondents did not prove with evidence that the OTPs and a ROM microcontroller were delivered together.

Because the Leapfrog remote control is not prior art, it also does not invalidate the asserted claims of the ’875 patent.

c) The Claims Are Anticipated in the Event the LeapFrog Remote Control Is Prior Art Under 35 U.S.C. § 102(g)

In the event, the LeapFrog remote control is deemed prior art, Respondents asserted claims 1-5, 8-10 and 14 are anticipated by the LeapFrog remote control. (RBr. at 37-39.).

i. Limitations 1(pre), 1(a), 1(b), 1(c) Are Anticipated by the LeapFrog Remote Control in the Event It Is Prior Art

The LeapFrog remote control, as evidenced by its user manual, discloses:

1(pre) a method for setting up a remote control that includes a keyboard, a processor, a memory, and a transmitter. The evidence shows a “User can program the toy to work with

...DVD players” and that the LeapFrog remote control included the listed components of a transmitter, processor, memory and keyboard. (RBr. at 42 (citing JX-0348C.0016; JX-0342.0002, -13-15; RX-0767, -69, -70; RPX-0123; Tr. (Houh) at 739:23-740:13 (demonstrating the LeapFrog remote control components and that they work as described in the user manual); RDX-0001.C98); RPBr at 60.).

1(a) entering, via the keyboard and processor, a configuration mode. (RBr. at 43 (citing JX-0348C.0017, -30-31 (showing LeapFrog “Functional Requirement Worksheet” and describing pressing DVDx key and ENT key to enter Configuration Mode or Enhanced Configuration Mode); JX-0342.0002, -13-15 (describing “Quick Setup” or Manual Setup” corresponding to the Configuration Mode or Enhanced Configuration Mode); Tr. (Houh) at 740:14-742:8; RDX-0001.C99); RPBr at 60-61.).

Figure 8: Functional Requirement Guidelines Description of Configuration Modes

Entering Configuration Mode

- 1) Configuration Mode is entered when one of the three DVDx (x = 1, 2 or 3) keys are held down for at least 3 seconds then released. If the press was for less than 3 seconds then DVDx will become active, but ECM or SCM will not be active.
- 2) Configuration Mode will only operate on the DVDx model selection, without disturbing the other two DVD configuration settings.
- 3) Configuration Mode is indicated to the user by the LED turned ON continuously.
- 4) If the user does not make a legitimate SCM or ECM operation within 1 minute then Configuration Mode is aborted (Step 30).

Selecting Enhanced Configuration Mode (ECM) or Standard Configuration Mode (SCM)

- 5) If the user enters ENT as the first key after entering Configuration Mode then SCM will be used (Step 7) but if a numeric entry is made it will be assumed to be a Manufacturer Code number and ECM is used (Step 9). If any key other than ENT or a numeric key is pressed, or if the DISABLE key is active, then Configuration Mode is aborted (Step 30).
- 6) Codes are entered using the 10 key numeric key pad and are terminated with an ENT press. Every time a digit key is pressed, the LED turns off and turns on again after release

Standard Configuration Method (SCM)

- 7) If an SCM model code is entered correctly and it is a valid value then begin blinking the visible LED at a rate of 2 Hz and proceed to Step 21) to allow the user to validate the code.
- 8) If the model code is entered correctly but it is an invalid value then abort setup mode by going to Step 30).

(JX-0348C.0017 (showing excerpt from LeapFrog “Functional Requirement Guidelines” and at Step 1 “Configuration Mode is entered when one of the three DVDx (x-1,2 or 3) keys are held down for at least 3 seconds then released.” or at step 5 “If the user enters ENT as the first key after entering Configuration Mode then SCM will be used”).).

The foregoing description of different keystrokes that can be entered in either the Configuration Mode or in the Enhanced Configuration Mode as shown, for example in Figure 8, may be interpreted as entering more than one configuration mode. However, this is consistent with the adopted claim construction that does not limit the claim to entering a single configuration mode. (*Markman* Order II at 2.).

1(b) accepting, via the keyboard and processor, an identifier-entry. (RBr. at 43-44 (citing JX-0348C.0017, -30-31 (showing LeapFrog remote control “Functional Requirement Worksheet” and describing at Step 6 “Codes are entered” or at step 7 to enter “an SCM model code” as the identifier-entry); JX-0342.0002, -13-15 (describing Quick Setup, step 3 to enter a two-digit code, or in Manual Setup, step 4 to enter a 3-digit code); Tr. (Houh) at 742:9-24; RDX-0001.C100); RPBr at 61.).

1(c) scanning, via the processor and memory, through remote control code-sets in a database stored in the memory of the Remote Control. (RBr. at 44 (citing JX-0348C.0018 (describing “Enhanced Configuration Method” and a search of code-sets according to the brand code at steps 9-17); JX-0342.0002 (describing scanning when “LITTLE LEAPS TM learning system will now search for the correct code” at step 4 of Quick Setup); JX-0342.0014-.0015 (describing scanning when “The activity controller will now send this code to your DVD player. While it searches, the green light...will flash” at step 5 in Manual Setup); Tr. (Houh) at 742:25-743:25; RDX-0001.C101); RPBr at 61.).

Roku did not dispute that the limitations are present. (Tr. (Houh) at 868:22-875:12;

CPBr. at 61-62; CRBr. at 21-28.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

ii. Limitations 1(c)(1) and 1(c)(2) Are Anticipated by the LeapFrog Remote Control in the Event It Is Prior Art

Limitation 1(c)(1) relates to iterating and testing the remote control code-sets that correspond to brand-identifiers. Respondents asserted that the LeapFrog remote control discloses this limitation at “Quick Setup,” an Enhanced Configuration Mode, when the two-digit brand number is entered, following by waiting. (RBr. at 44 (citing JX-0348C.0030 (showing process flow of “ECM” including entering 2 digit DVD band code, then ENT, “Send IR codes for current codeset” and iterating through a loop for “Next Codeset”); JX-0342.0006 (listing codes by brand in user manual); JX-0348C.0018 (explaining iterating and scanning steps in the Enhanced Configuration Method); Tr. (Houh) at 747:25-748:23; RDX-0001.C104); RPBr. at 61-62.). This limitation is also explained, *supra*, at limitation 1(c). Figure 9 shows an excerpt from the “Functional Requirement Guidelines” describing how the software on the Leapfrog remote control works in “Enhanced Configuration Mode” at “ECM Flow.”

Figure 9: Functional Requirement Guidelines Flowchart for “Configuration Mode”



(JX-0348C.0030 excerpt (depicting the “ECM Flow” to iterate and scan as in limitation 1(c)(1).).

Roku did not dispute that iterating and testing occur by sending a search pattern sequence of key codes. (CBr. at 22; CPBr. at 61.). Roku argued the search pattern sequence is not a test of a code-set. (CBr at 22; CPBr at 61.). Roku’s expert, Dr. Balakrishnan, explained his reasoning by stating “So what is being looked for here is a search pattern, ... -- and the test is, did I get that pattern, enter up left and enter, and the test is not did I enter a particular keycode,

which I think is what the claim is requiring. So that is the crux of the difference.” (Tr. (Balakrishnan) at 871:8-13.). Roku argued that “turning off or muting the DVD player in response to a specific control code function ... is a test of the corresponding code-set.” (CBr. at 24-25.).

In response to Roku’s argument about a search pattern not being a code-set, Respondents contended that claim 1 requires “one or more specific control code functions.” (CBr. at 45.) Respondents explained that ENTER, UP, LEFT, ENTER are control functions, that they control the DVD player. (CBr. at 43 (citing Tr. (Vergis) at 512:20-513:1, 529:9-530:15, 531:7-532:14; Tr. (Houh) at 746:12-17).). Respondents’ expert, Dr. Atif G. Hashmi, explained that this is evidenced by source code which he reviewed.⁴⁰ (CBr. at 45 (citing RPX-0116C (source code); RDX-0003C.0025; Tr. (Hashmi) at 582:21-583:3, 584:12-19; Tr. (Houh) at 745:17-746:2).). Additionally, Respondents explained that “ENTER UP LEFT ENTER” comprises control codes for the DVD player, again as evidenced by the source code. (Tr. (Houh) at 747:1-10.).

Roku ignored the words of the claim limitation. As shown in the flowchart above (Figure 9), [REDACTED]

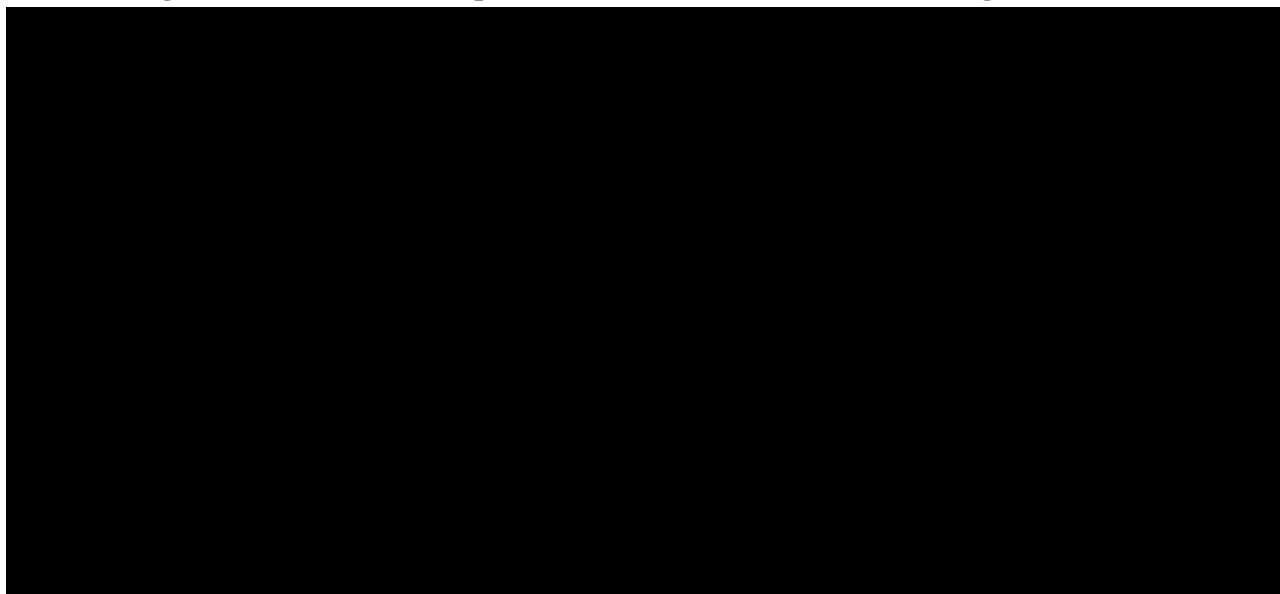
[REDACTED]

[REDACTED] (JX-0345C.0030.). [REDACTED]

[REDACTED] as shown below in Figure 10.

⁴⁰ When he testified during the hearing on January 25, 2022, Dr. Atif G. Hashmi was President of Bitwise Forensics Research, Inc. (RPSt. at Ex. 3.). Respondents identified Dr. Hashmi as an expert witness to testify about matters relating to the accused products and prior art, including source code related to the accused products and the prior art. (RPSt. at 2.).

Figure 10: Functional Requirement Guidelines Enhanced Configuration Mode



(JX-0348C.0018 excerpt (describing steps of the “ECM Flow”)).

The

(JX-0348C.0018 at ¶ 14.). Claim 1 states “iterating,,,through the remote control code-sets.” It is clear that code-sets are iterated through because “Next codeset” is part of the iteration in the LeapFrog remote control. Claim 1 also states “testing said remote control code-sets by sending, ... one or more specific control code functions of a corresponding remote control code-set.” This means that “specific control code functions” are used in the testing, not the code-set itself. Moreover, the code functions are tested “via the transmitter” which, while not limited in the claim, is consistent with using infrared radiation (an “IR signal” as disclosed in the LeapFrog remote control’s “Functional Requirement Guidelines”). Therefore, whether a “search pattern” or a “codeset” is tested or sent is of no import because the claim requires “testing ... specific control code functions of a corresponding remote control code-set.” The claim does not require testing of code-sets; it requires testing by “one or more ... code functions.” Respondents have

shown with evidence from the source code that the “search pattern” encompasses a code function. Roku has not argued that the LeapFrog remote control testing by an IR signal of code functions does not read on claim 1. Accordingly, limitation 1(c)(1) is anticipated by the LeapFrog remote control.

Limitation 1(c)(2) is disclosed by the LeapFrog remote control. Respondents argued the “Manual Setup” method, or Standard Configuration Method, includes entering a 3-digit code and testing in the same manner as in limitation 1(c)(1) via an IR Signal and “ENTER, UP, LEFT, ENTER” during testing. (CBr. at 46-47 (citing JX-0342.0014-15; JX-0348C.0019, 31; RDX-0003C.0027-28; Tr. (Houh) at 750:9-751:3); CPBr at 62.).

Roku argued that “ENTER, UP, LEFT, ENTER” does not meet limitation 1(c)(2) for the same reasons as for limitation 1(c)(1). However, for the same reasons limitation 1(c)(1) is anticipated, so too is limitation 1(c)(2). Limitation 1(c)(2) has the same claim language of “testing...by one or more specific control code functions.” The sequence “ENTER, UP, LEFT, ENTER” comprises “one or more specific control code functions.” Accordingly, limitation 1(c)(2) is anticipated by the LeapFrog remote control.

iii. Claims 2-5, 8-10 And 14 Are Anticipated by the LeapFrog Remote Control

Respondents argued that claims 2-3 and 8-10 are also anticipated by the LeapFrog remote control. (RBr. at 47-52; RPBr. at 63-65.). Respondents demonstrated that the LeapFrog remote control iterated until user approval, as in claims 2-3, as evidenced by the “Functional Requirement Guidelines.” (RBr. at 47 (citing JX-0348C.0018-19 (stating “a confirmation key press will indicate that the Search pattern just transmitted is for a code set that matches the user’s DVD player model” in the “Functional Requirement Guidelines”); JX-0342.0002 (stating “press

the red button to select”); RDX-0001C.0106); RPBr. at 63). Respondents argued and demonstrated that the LeapFrog remote control uses a numbering convention and a “wild card” code, as in claims 8-9, as evidenced by the user manual that describes a two-digit, three-digit or “00” wild card codes. (JX 0342.0002 (describing at step three to enter “the two-digit manufacturer number”); JX-0342.0014-15 (stating to enter “a 3-digit code listed next to manufacture of your DVD player” in the user manual); JX-0348C.0018 (stating “00” as indicating “an exhaustive search of all brands in the North America database”); Tr. (Houh) at 756:24-575:9; RDX-0001.0113.). Respondents demonstrated that the LeapFrog remote control has a memory storing a computer program that performs the steps of claim 1, as in claim 10, as evidenced by the LeapFrog’s possession of a processor and a memory, and auto-scanning that relies on memory to conduct the steps of the method. (RX-0769 (showing processor and memory); JX-0348C.0016 (describing “User can program” the remote control and using an “auto-scanning process” in the “Functional Requirement Guidelines”); RDX-001C.0114; Tr. (Houh) at 757:10-19.).

Roku did not dispute these claims are anticipated beyond the extent to which claim 1 was disputed. (CBr. at 28; CPBr. at 62.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Respondents argued that that claim 4 is anticipated and/or obvious over the LeapFrog remote control. Respondents proved that limitations 4(pre), 4(a) and 4(b) are clearly anticipated by the LeapFrog remote control as evidenced by the “Requirement Functional Guidelines” and user manual in like manner to the limitations in claim 1. (JX-0348C.0030-31, -18; JX-0342.0002, -15; RDX-0001C.0108-09; Tr. (Houh) at 752:21-753:9; Tr. (Hashmi) at 582:21-583:16, 584:12-585:1.). Roku did not dispute these claim limitations are anticipated beyond the

extent to which claim 1 was disputed. (CBr. at 28-29; CPBr. at 63.). Thus, any argument on this issue is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

Claim limitation 4(c) is disputed. Respondents contended that this limitation is disclosed by the LeapFrog remote control as evidenced by the “Requirement Functional Guidelines” and user manual describing “Quick Setup”/Enhanced Configuration Mode and “Manual Setup”/Standard Configuration Mode and testing keys through “normal use” or after reentering either setup process. (RBr. at 49 (citing JX-0342.0002, -14-15 (user manual describing setting up the remote control); Tr. (Houh) at 754:1-25). Roku contended there is no evidence that additional testing is performed. Roku also argued that this limitation is consistent with claim 1. (CBr. at 28-29; CPBr. at 63.).

Respondents have the convincing argument and evidence. For the same reasons claim 1 is anticipated, so too is claim 4. “Enabling ...testing” in claim 4 does not require specific testing beyond that which a user does every day with a remote control. Keys are routinely pushed to test and determine whether a desired result occurs (the remote control works), and testing is part of the routine of setting up a remote control. The claims do not require testing of particular code-sets in a particular order. Like claim 1, embodiments from the specification about testing cannot be imported into the claim. *Hill-Rom* at 1371 (explaining limitations from specification embodiments are not read into the claims). Accordingly, claim 4 is anticipated by the LeapFrog remote control in the event it is prior art.

Respondents asserted that claim 5 is anticipated by the LeapFrog remote control. (RBr. at 49-50; RPBr. at 65.). Specifically, Respondents asserted that the LeapFrog remote control discloses a device type entry, as in claim 5, when a DVD1, DVD2 or DVD3 key is pressed because a DVD is a device type. (RBr. at 49-50; JX-0348C.0017 (stating “one of the three

DVDx (x=1, 2 or 3) keys are held down”); Tr. (Houh) at 755:5-756:12).). Roku contended that selecting from multiple instances of the same device type is not within the scope of claim 5, that according to Roku, requires different device types. (CBr. at 30.).

Roku is again impermissibly importing embodiments from the specification into the claim. “A device type” entry does not require a different device type (such as a television compared to a DVD device type) entries. If it did, the claim would state that. The claim is silent in that regard, and therefore to require different device type entries is not within the scope of claim 5. Claim 5 is anticipated by the LeapFrog remote control if it is deemed to be prior art.

Claim 14 is anticipated for the same reasons that claim 1 is anticipated. Respondents have proven that the LeapFrog remote control comprises a:

14(pre) Remote Control. (JX-0342 (User Manual) describing use consistent with a remote control.).

14(a) Means for entering a configuration mode. The Parties agreed that limitation 14(a) is a means-plus-function limitation and that the function is “entering a configuration mode.” (*Markman* Order I at 4.). The Parties also agreed that the corresponding structure is a keyboard. (*Id.*). Respondents proved that the LeapFrog remote control includes keys that perform the function of entering a configuration mode. (JX-0342.0001 (showing “3 yellow setup buttons” numbers “1, 2, 3”).).

14(b) Means for accepting an identifier-entry. The Parties agreed that limitation 14(b) is a means-plus-function limitation and that the function is “accepting an identifier-entry.” (*Markman* Order II at 6-7.). Under the adopted construction, the structure for “means for accepting an identifier entry” requires “a numerical or SMS keyboard.” (*Id.* at 6-9.). Respondents proved that the LeapFrog keyboard performs the function of accepting an identifier-

entry (JX-0342.0013 (showing a keypad); JX-0342.0045 (showing a list of numbers “Manufacturer Codes” such as “24 for “AIWA” that are numbers entered using the keypad to enter an identifier-entry.).

Roku did not dispute that the LeapFrog remote control meets limitations 14(pre), 14(a) and 14(b) other than to rely on arguments for claim 1. (CRBr. at 31; CPBr. at 63.). Thus, any argument that Roku attempts to make on this issue beyond arguments for claim 1 is deemed abandoned, withdrawn, and/or waived under Ground Rules 7.2 and 10.1.

14(c) Means for scanning through remote control code-sets in a database stored in a memory of the Remote Control wherein the means for scanning are adapted for. The Parties agreed that limitation 14(c) is a means-plus-function limitation and that the function is “scanning through remote control code-sets.” (*Markman* Order II at 9.). The structure of limitation 14(c) requires “processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional).” (*Id.* at 9-13.). Respondents proved the LeapFrog remote control scans through different code-sets as in the corresponding structure of this limitation. (JX-0342.0002 (describing “Quick Setup” or “Manual Setup” using code-sets as evidenced by JX-0348C.0030-31 describing iterating with code-sets); (Tr. (Houh) at 759:10-21 (explaining a Brand Code Search can be performed twice).). Roku’s expert acknowledged that performing the search twice is equivalent to a second level scan of different code-sets. (Tr. (Balakrishnan) at 223:5-224:5.). Therefore, the LeapFrog meets the means for scanning limitation of 14(c).

14(c)(1) and 14(c)(2) Identical to 1(c)(1) and 1(c)(2)

Limitations 14(c)(1) and 14(c)(2) are identical to limitations 1(c)(1) and 1(c)(2). (JX-0001.0011-12). The LeapFrog satisfies limitations 14(c)(1) and 14(c)(2) for the same reasons

discussed above with respect to limitations 1(c)(1) and 1(c)(2). (*See* Section (c) vii, *supra* (discussion of limitations 1(c)(1) and 1(c)(2))). Accordingly, the LeapFrog remote control anticipates claim 14 to the extent it is deemed prior art.

iv. Secondary Considerations of Non-Obviousness Do Not Overcome Obviousness in the Event the LeapFrog Remote Control Is Prior Art

Roku alleged that the commercial success, public praise and licensing of its products are indicia of non-obviousness. (CRBr. at 31-32.). Roku presented sales of over [REDACTED] for 2020 and 2021, praise from a single online customer review, and licensing to other companies. (CRBr. at 32 (citing JPX-0019-20; Tr. (Balakrishnan) at 876:2-17, 877:10-14; CDX-0006C.24-26).). However, secondary considerations are not available to overcome a rejection under 35 U.S.C. § 102. *Application of Wiggins*, 488 F.2d 538, 543 (C.C.P.A. 1973). Even if the LeapFrog was prior art under 35 U.S.C. § 103, Respondents are also correct in that Roku failed to prove a nexus between the evidence and the claims. The nexus must show a “legally and factually substantial connection” between the evidence and the claims. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). A single online review of one person is hardly sufficient to show industry praise. Sales data and licensing, while they can be persuasive, have not sufficiently linked the asserted claims to the sales data and licensing. Roku has failed to show that secondary considerations would overcome invalidity under 35 U.S.C. § 103 in the event the LeapFrog remote control is prior art.

5. The Claims Are Patentable Subject Matter Under 35 U.S.C. § 101

Respondents argued that the '875 patent claims fail both steps of the *Alice* framework and are therefore invalid under 35 U.S.C. § 101. (RBr. at 56-57.). Roku disagreed. (CRBr. at 32-37.).

a) The Claims Are Valid Under *Alice* Step One

The Charter, Altice and WOW Respondents argued that the '875 patent expressed the abstract idea of “a user pressing keys on a remote control, testing for a response, and then observing whether the remote control can control another device.”⁴¹ (RBr. at 56; RPBr. at 66-67.).

Roku argued that the claims are directed to a technological solution by a method that combines brand-identifiers and code-set-identifiers in a single configuration mode that is simpler and more user friendly. (CRBr. at 33.).

The Federal Circuit has explained that “a patent may issue ‘for the means or method of producing a certain result, or effect, and not for the result or effect produced.’” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016) (citing *Diehr*, 450 U.S. 175, 182 n.7, 101 S.Ct. 1048.). Thus, claims should embody a “method that improves the relevant technology,” rather than “a result or effect that itself is the abstract idea and merely invoke generic processes and machinery.” *Id.* (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016)); *see also Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1048 (Fed. Cir. 2016.).

Roku has shown the claimed invention operates to simplify the user interface. (CRBr. at 33 (citing Tr. (Balakrishnan) at 878:9-879:21; JX-0001 at 2:44-47).) The invention provides tangible technological benefits such as saving space on the remote control and preventing fallback. (CRBr. at 34 (citing Tr. (Balakrishnan) at 878:21-897:21 and Tr. (Respondents’ Opening Statement) at 58:24-59:2).). These together improve the technology of programming

⁴¹ The UEI, LG and Samsung Respondents do not assert invalidity under 35 U.S.C. § 101. (RBr. at 66 n.2.).

remote controls. “To be patent-eligible [under *Alice* step one], the claims must recite a specific means or method that solves a problem in an existing technological process.” *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150 (Fed. Cir. 2019) (discussing *Alice* step one). Respondents have not shown by clear and convincing evidence that the claims of the ’875 patent fail this standard.

Accordingly, the Charter, Altice and WOW Respondents failed to prove by clear and convincing evidence that the asserted claims of the ’875 patent are directed to an abstract idea under *Alice* step one.

b) The Claims Are Valid Under *Alice* Step Two

Because the claims are not directed to an abstract idea under step one of the *Alice* analysis, there is no need to proceed to step two of the *Alice* analysis. *See Alice*, 134 S. Ct. at 2355. However, even if the claims were abstract under step one, they would still be eligible under step two of *Alice*. The Federal Circuit has explained that “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

The Charter, Altice and WOW Respondents asserted that the claims “are directed to conventional functions of setting up a remote control that could be performed by a human using generic remote control hardware and computer software.” (RBr. at 57.). However, Roku argued that the invention is directed to concepts that were not routine or conventional, that is, combining the brand-identifiers and code-set-identifiers in a single configuration mode. (CRBr. at 35.). An inventive concept can come from combining “known, conventional pieces.” *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016). Thus, while the individual techniques of programming a remote control, a brand-identifier or a code-set-

identifier, are admitted prior art, the combination of the two embodies the inventive concept and is more than a well-known method. The claim construction states that the steps are not required to take place within a single configuration mode. (*Markman* Order II at 2.). However, using a single configuration mode is also within the scope of the claimed invention.

The combination of programming with a brand-identifier or a code-set-identifier under one configuration mode identifies an inventive concept, as described under step one of *Alice*. That also supports eligibility under *Alice* step two.

Accordingly, the Charter, Altice and WOW Respondents have failed to prove by clear and convincing evidence that the asserted claims of the '875 patent are directed to an abstract idea under *Alice* step two.

6. Claim 10 Complies with 35 U.S.C. § 112

Respondents asserted that claim 10 is indefinite under 35 U.S.C. § 112. (RBr. at 57; RPBr. at 68-69.). Respondents argued that it is unclear whether claim 10 is infringed when the claimed device is made, or only when the steps of claim 1 are performed. (RBr. at 57.). Relying on *IPXL Holdings, L.L.C. v Amazon.com, Inc.*, Respondents contended that a single claim covering a system and a method of using that system is indefinite. (RBr. at 57 (citing *IPXL*, 430 F.3d 1377, 1384 (Fed. Cir. 2005))).

Roku argued *Beauregard* claims are common and not indefinite. (CRBr. at 39 (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011) (“A Beauregard claim—named after *In re Beauregard*, 53 F.3d 1583 (Fed.Cir.1995)—is a claim to a computer readable medium ... containing program instructions for a computer to perform a particular process.))).

Respondents have failed to show that claim 10 is indefinite. Rather than being indefinite,

claim 10 is a claim directed to a “computer readable medium” than is programmed with the steps of claim 1, from which it depends. Respondents have not asserted that the method itself is not indefinite such that its indefiniteness would somehow carry over into the computer-readable medium. The computer-readable medium is also not indefinite. Rather, it is programmed to conduct the steps of the method from which it depends.

Accordingly, claim 10 is not indefinite under 35 U.S.C. § 112(b).

VII. DOMESTIC INDUSTRY REQUIREMENT – ECONOMIC PRONG

A. Legal Standard

The Commission may only find a violation of Section 337 “if an industry in the United States relating to the articles protected by the patent . . . exists or is in the process of being established.” 19 U.S.C. § 1337(a)(2) (emphases added). Typically, a complainant must show that a domestic industry existed at the time the complaint was filed. *See Motiva LLC v. Int’l Trade Comm’n*, 716 F.3d 596, 601 n.6 (Fed. Cir. 2013).

The domestic industry requirement consists of a “technical prong” and an “economic prong.” *See, e.g., Certain Elec. Devices, Including Wireless Commc’n Devices, Portable Music & Data Processing Devices, & Tablet Computs.*, Inv. No. 337-TA-794, Order No. 88, 2012 WL 2484219, at *3 (June 6, 2012); *Certain Unified Commc’ns Sys., Prods. Used with Such Sys., and Components Thereof*, Inv. No. 337-TA-598, Order No. 9 at 2 (Sept. 5, 2007) (“*Communications Systems*”). A complainant satisfies the “technical prong” of the domestic industry requirement when it proves that its activities relate to an article “protected by the patent.” *See Communications Systems*, Order No. 9 at 2. A complainant satisfies the “economic prong” of the domestic industry requirement when it demonstrates that the economic activities set forth in subsections (A), (B), and/or (C) of Section 337(a)(3) have taken place or are taking place with

respect to the protected articles. *See id.*

Subsection 337(a)(3) states that:

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –

- (A) significant investment in plant and equipment;
- (B) significant employment of labor, or capital; or
- (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3).

Because the criteria are listed in the disjunctive, satisfaction of any one of them will be sufficient to meet the economic prong of the domestic industry requirement. *Certain Integrated Circuits, Chipsets and Prods. Containing Same*, Inv. No. 337-TA-428, Order No. 10, Initial Determination (May 4, 2000) (“*Integrated Circuits*”) (unreviewed). Establishment of the “economic prong” is not dependent on any “minimum monetary expenditure” and there is no need for a complainant “to define the industry itself in absolute mathematical terms.” *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Comm’n Op. at 25-26 (May 16, 2008) (“*Stringed Instruments*”). However, a complainant must substantiate the nature and the significance of its activities with respect to the articles protected by the patent at issue. *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm’n Op. at 30 (Feb. 17, 2011) (“*Imaging Devices*”).

The Commission has interpreted Sections 337(a)(3)(A) and (B) to concern “investments in plant and equipment and labor and capital with respect to the *articles* protected by the patent.” *Certain Ground Fault Circuit Interrupters and Prods. Containing Same*, Inv. No. 337-TA-739, 2012 WL 2394435, at *50, Comm’n Op. at 78 (June 8, 2012) (“*Circuit Interrupters*”) (emphasis

in original) (quoting 19 U.S.C. §§ 1337(a)(3)(A), (B)).

There is no mathematical threshold test or a “rigid formula” for determining whether a domestic industry exists. *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm’n Op. at 39, USITC Pub. 4005 (May 2008) (“*Male Prophylactic Devices*”). However, to determine whether investments are “significant” or “substantial,” the actual amounts of a complainant’s investments or a quantitative analysis must be performed. *Lelo Inc. v. Int’l Trade Comm’n*, 786 F.3d 879, 883-84 (Fed. Cir. 2015). Even after *Lelo*, which requires some quantification of a complainant’s investments, there is still no bright line as to a threshold amount that might satisfy an economic industry requirement.

It is the complainant’s burden to show by a preponderance of evidence that each prong of the domestic industry requirement is satisfied. *Certain Prods. Containing Interactive Program Guide and Parental Control Tech.*, Inv. No. 337-TA-845, Final Initial Determination, 2013 WL 3463385, at *14 (June 7, 2013). Moreover, the Commission makes its determination by “an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.” *Male Prophylactic Devices*, Comm’n Op. at 39 (quoting *Certain Double Sided-Floppy Disk Drives and Components Thereof*, Inv. No. 337-TA-215, Comm’n Op. at 17, USITC Pub. 1860 (May 1986)). “Commission precedent permits complainants to present evidence of their U.S. investments using methods and approaches that are appropriate to the facts of a particular investigation; such methods and approaches may include a comparison between complainant’s domestic investments to the complainant’s foreign investments to inform the contextual analysis for determining whether the claimed domestic investments are significant or substantial.” *Certain Movable Barrier Operator Sys. and Components Thereof*, Inv. No. 337-TA-1118, Comm’n Op. at 23 (Jan. 12, 2021) (internal citations omitted).

In addition, as the Commission explained, it has looked to several different “contextual indicators” to determine if a complainant’s investments and expenditures are sufficient to constitute a domestic industry. *See Certain Bone Cements, Components Thereof and Prods. Containing the Same*, Inv. No. 337-TA-1153, Comm’n Op. at 26 (Jan. 25, 2021). The Commission stated:

For instance, one methodological approach the Commission has used in both pre- and post-1988 investigations is “comparing complainant’s domestic expenditures to its foreign expenditures.” Another approach, among others, is to consider “the value added to the article in the United States by the domestic activities.” Indeed, Commission decisions have accepted a “value-added” analysis to assess whether an industry in the United States exists. Moreover, the Federal Circuit in *Schaper* compared the investments in the United States with “the total production process of [the domestic industry products],” and found that there was not “significant value added” to the products in the United States. In sum, as discussed above, the Commission’s determination as to the existence of a domestic industry must be assessed according to a highly fact-specific assessment of the “nature and significance” of the complainant’s domestic activities.

Id. at 26-27 (internal citations omitted).

B. Economic Prong Overview

Roku asserted in its Complaint, in testimony and in pre- and post-Hearing filings, that it has satisfied the economic prong of the domestic industry (“DI”) requirement because of its significant investments under 19 U.S.C. § 1337(a)(3)(B) in labor and capital relating to the DI

Product protected by the '875 patent: the Gazelle remote control.⁴² (CBr. at 82-88.).⁴³ Roku argued that it has made significant investments in labor and capital in the United States, including in a significant percentage of domestic labor expenses for research and development. (CBr. at 81.).

Roku is relying on 19 U.S.C. § 1337(a)(2) for an argument that a domestic industry exists pursuant to 19 U.S.C. § 1337(a)(3) and for its argument that that “it is in the process of establishing a domestic industry.” (Compl. at ¶¶ 6, 167.). Both arguments are tied to Roku’s '875 patent and Roku’s reliance on the development of the Gazelle remote control.

Notwithstanding Roku’s failure to satisfy the technical prong of the DI requirement, Roku has argued, that “there is a significant likelihood that this economic domestic industry will

⁴² In its Initial Post-Hearing Brief, Roku withdrew its assertion that it satisfies 19 U.S.C. § 1337(a)(3)(A) with respect to its investments in plant and equipment as they relate to the '875 patent. That argument is deemed waived under Ground Rule 10.1. (CBr. at 82 n.11.). Therefore, all of Roku’s discussion pertaining to its expenditures in plant, facilities and equipment in its Pre-Hearing Brief are irrelevant to this ID. (*See* CPBr. at 130-133, 136-137.). As noted elsewhere, and in Order No. 37, the '511 patent was withdrawn for purposes of this ID based upon the finding in Order No. 30 that claim 5 of the '511 patent is indefinite.

Roku’s decision to withdraw its facilities and equipment investments to support its economic prong argument also appears to reflect Roku’s recognition that its █████ percentage of plant and equipment allocable to the '875 patent in comparison to its worldwide expenditures for the same in Q1 2019 and Q1 2021 (Tr. (Akemann) at 808:8-809-11) are not significant. Similarly, Roku withdrew its assertion that it satisfied the requirement by a domestic industry “in the process” of being established for the '511 patent. That argument, too, is deemed waived for purposes of this ID only under Ground Rule 10.1 and pursuant to the Stipulation of the Parties that Roku would not offer any evidence during the Hearing on the '511 patent.

While Roku alleged in its Complaint that it satisfied 19 U.S.C. § 1337(a)(3)(C), also with respect to the '875 patent, Roku did not make that argument in its Post-Hearing Brief, and thus, that argument is deemed waived under Ground Rule 10.1. (Compl. at ¶¶ 167-170.).

continue to exist at the time the Gazelle remote is commercially released in October 2022.” (*Id.* at 82.).⁴⁴

For many of the same reasons that Roku has not satisfied the technical prong of the DI requirement, as discussed in Section VI.D, Roku has not satisfied the economic prong of the DI requirement. For the additional reasons discussed below, Roku has not met its burden of proof that its investments satisfy the economic prong of the DI requirement under 19 U.S.C. § 1337(a)(3)(B), let alone that it has met its burden that Roku has a domestic industry that “exists or is in the process of being established” pursuant to 19 U.S.C. § 1337(a)(2) and (a)(3).

Roku’s investments in the Gazelle remote control at the time of the filing of the Complaint were not significant either qualitatively or quantitatively. In fact, Roku cannot point to any specific dollar investments that went into the development of the Gazelle remote control from October 2020, when the Gazelle was an “idea” and April 8, 2021 when the Complaint was filed.

⁴⁴ The overview discussion of Roku’s investments in its DI in its Pre-Hearing Brief is somewhat confusing. (*See* CPBr. at 128-129.). There is no question that Roku spends [REDACTED] in the United States. Roku’s problem is with clarity, and in specifying just how much of its investments are for the ’875 patent DI product, the Gazelle remote control, and/or the products on which Roku says the Gazelle is built, that is the Elk and Falcon remote controls. Roku’s discussion of the [REDACTED] Roku has spent on its streaming services, its operating system (“OS”) and on the development of the Roku TV and Roku’s other product accessories, such as remote controls, in the United States, is largely irrelevant to this ID. (*See* CPBr. at 135-141.). While Roku may have spent [REDACTED] to develop its streaming services, streaming players, OS and Roku’s other well-known products, the sole product it is relying upon for the economic prong of the DI requirement is the Gazelle remote control, which Roku alleged is built on the development of the Elk remote control which started in 2018 and the Falcon remote control which started in 2019. (CPBr. at 134 (citing JX-0872 (Akemann Rep.) at ¶88; JX-0522 (Peters Dep. Tr.) at 31:11-34:9; JX-0539 (Thomas Dep. Tr.) at 22:5-25:11).). While Roku contended that the Gazelle was built on the development work of [REDACTED] YRoku did not even start the development of the Gazelle remote control, the primary product that Roku’s DI relies upon, until late 2020. Roku did not even have a Unified TV Code configuration guide until March/April time frame of 2021, or at about the time that Roku filed its Complaint. (*See* CDX-0008C.1; *see also* Sections VI.D, *supra*.).

Similarly, Roku's investments in the Gazelle remote control were not significant either qualitatively or quantitatively by the close of discovery. The *total* of the pre-Complaint investments that Roku identified for significant employment in labor or capital is the sum of [REDACTED]⁴⁵ [REDACTED] (CBr. at 86-87; (emphasis added); CPBr. at 141-148.). Yet, as Roku itself acknowledged, it did not start tracking its research and development expenses for the Gazelle until [REDACTED] [REDACTED] (CPBr. at 134; CBr. at 142.). Roku's investments [REDACTED] [REDACTED] [REDACTED] (Id.).

Because of these problems, and others that are discussed below, the Respondents, have argued persuasively, supported by evidence or lack thereof, that Roku's economic prong case "founders" because of at least four (4) problems. (RRBr. at 65.).

C. Roku Has Not Made Significant Economic Investments Pursuant to 19 U.S.C. § 1337(a)(3)(B)

1. Roku Did Not Have Any Investments in the Gazelle Remote Control When It Filed Its Complaint and Is Relying on Pre-Institution Investments in Products that Do Not Practice the '875 Patent

Typically, a complainant must show that a domestic industry exists at the time the complaint was filed, which in this case was April 8, 2021. *Motiva* at 716 F.3d 601 n.6. Similarly, in a recent case in which many of the same products were at issue, the ALJ found that Roku lacked a significant domestic industry. *See Certain Digital Video-Capable Devices, Inv.*

⁴⁵ In its Pre-Hearing Brief, Roku uses the figure of [REDACTED] for capital and labor that it attributes to "the '875 patent." (CPBr. at 144 (citing JX-0872C (Akemann Rep.) at ¶ 190); *id.* at 145.).

No. 337-TA-1224, ID at 138-168 (Oct. 21, 2021) (“*Certain Digital*”).

As a starting point, the Commission has found that a domestic industry does not exist where a complainant did not allocate its investments between the practicing and non-practicing products. *See Certain Subsea Telecomm Sys.*, Inv. No. 337-TA-1098, Comm’n Op. at 41 (Oct. 21, 2019) (“*Subsea Telecomm*”). Roku has acknowledged, and it is undisputed, that at the time Roku filed its Complaint, Roku had not made *any* investments in the Gazelle remote control.

(RX-0332C (Bright Dep. Tr.) at 115:4-116; Tr. (Bright) at 150:14-18.). [REDACTED]

[REDACTED]

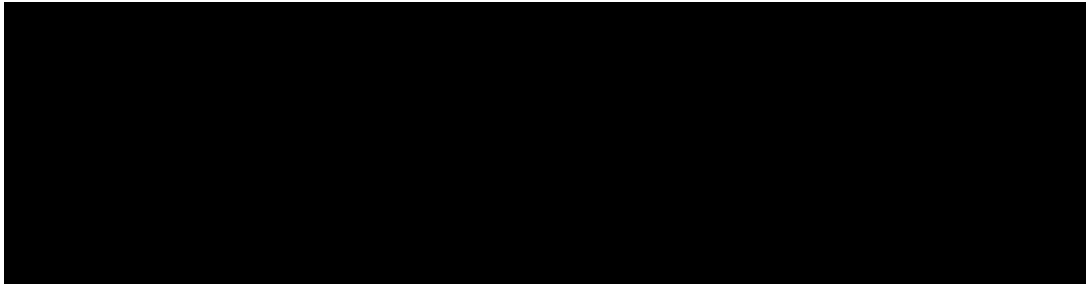
[REDACTED] (See CDX-00008C.0001; *see also* CPBr. at 141-145; CRBr. at 83-88.).

Yet, while Roku has argued that the Gazelle remote control will contain many of and “build on” the features of the Elk and the Falcon, there is no question, and Roku has not disputed, that [REDACTED] (See, e.g., CPBr. at 137, 138.). Carefully, Roku has avoided stating that fact.

Roku did not mention that [REDACTED] in its Pre-Hearing Brief, and therefore, has waived that argument pursuant to Ground Rule 7.2. Roku offered little to no evidence on the features of the Elk and the Falcon remote controls that the Gazelle remote control *will* practice, and therefore, waived any such arguments where specificity was lacking under Ground Rule 10.1.

Moreover, it is not clear which features from the Elk and Falcon remote controls that Roku planned to incorporate into the Gazelle. At the time of the filing of the Complaint, the Gazelle remote control did not exist except as a gleam in someone’s eye (which Roku describes

as in planning) and the Elk and the Falcon were in development. (*See* Section VI.D; *see also* CDX-00008C.0001.). Among the most precise statements that Roku made about the relationship between the Falcon, Elk and Gazelle remote controls as they existed in April 2021, is that the:



(CBr. at 83-84 (citing Tr. (Michael Akemann)⁴⁶ at 386:14-24, 386:24-387:6, 430:5-23, 435:9-21, 437:4-17).).

Roku also described the Gazelle remote control as



 (CPBr. at

134 (citing JX-0522 (Peters Dep. Tr.) at 31:11-34:9.; JX-0539 (Thomas Dep. Tr.) at 22:5-25:11).). In his testimony, Dr. Akemann made a “link” among the three remote controls, the Elk, the Falcon and the Gazelle, even though the development on the Elk began in 2018, the development of the Falcon began in 2019 and the Gazelle in 2020, with few steps actually completed for any of the remote controls. (Tr. (Akemann) at 387:7-13; 387:24-388:5; *see* CDX-00008C.0001.). Dr. Akemann called the Elk and Falcon remotes “a necessary prerequisite for the Gazelle Remote.” (CPBr. at 134 (citing JX-0872C (Akemann Rep.) at ¶ 88).). Dr. Akemann called it “economically reasonable” for Roku to rely on investments related to the Elk and Falcon remote controls for the Gazelle remote control. (*Id.* at ¶ 43.).

⁴⁶ When he testified during the Hearing on January 25, 2022, Dr. Michael Akemann was a Managing Director at Berkeley Research Group, LLC. (CPSt. at Ex. 3.). Roku identified Dr. Akemann as an expert to testify about “economic prong on domestic industry of the Asserted Patents, remedy, and bond.” (*Id.* at 2.).

While in principle, Dr. Akemann may be correct, Dr. Akemann's testimony was not only overly broad on the degree of the development that existed for each remote control and which features *would* carry over from one remote control to the other, but also on the allocations that existed at the time of the filing of the Complaint, before or after.

For example, Dr. Akemann failed to note that according to Roku's own timeline, that it was not until January 21, 2021—a mere three (3) months before Roku filed its Complaint—that there was even Gazelle exploratory research. (CDX-0008C.0001.). Similarly, Dr. Akemann did not mention that work on storing an IR database unto the Elk and Falcon remotes did not begin until July 2021, after Roku filed its Complaint. By Roku's own timeline, it was not until late March/early April 2021 that a Unified TV IR code configuration for the Gazelle was written. (See CDX-0008C.0001.). It is not clear how much money was allocated on any of the three (3) products separately for research and development and engineering at any time for the development that was occurring for each product. Dr. Akemann certainly did not have those figures or allocations for the development of those remote controls.

As Respondents argue “even if past investments in non-practicing products count, there must be some allocation between the practicing and non-practicing products. (RBr. at 143 (citing *Subsea Telecomm*, Comm'n Op. at 41 (“complainants have not satisfied the domestic industry requirement where the complainant failed to allocate expenses to account for non-domestic products that do not practice the patent”)). Roku's witnesses, whether fact or expert witnesses, did not make that allocation even for Roku's expenditures on its [REDACTED] [REDACTED] products in late 2020 when the idea for the Gazelle remote control was being discussed, and the close of discovery on October 8, 2021.

As Respondents noted, Roku's fact witness on its economic investments, Mr. Bright, did

not identify a single dollar that Roku had spent on the Gazelle remote control at the time it filed its Complaint. (RBr. at 66 (citing Tr. (Bright) at 150:14-18); *see also* JX-0841C (Bright Dep. Tr.) at 115:4-6.). Neither did nor could Dr. Akemann, Roku's economic expert. Dr. Ackemann was asked during the Hearing if he had allocated the [REDACTED] [REDACTED] that Roku claims to have spent on its [REDACTED] between the Elk and Falcon remote controls—from 2019-2021, and the Gazelle remote control in 2020-2021. Dr. Akemann was forthright in his admission that he had not made such an allocation: “Q. [T]he so-called investments or [sic] that may have occurred in 2021 or very late 2020, you didn’t allocate that our demonstrate that to the Court, correct? A. I haven’t done a separate allocation. I bundled them [i.e., Gazelle, Elk and Falcon expenditures] together for the reasons explained in my testimony. (Tr. (Akemann) at 427:5-10.).

Instead, Dr. Akemann performed what he described as an “allocation” based on headcount of the personnel assigned to the [REDACTED] to make allocations from 2019 through Q1 2021. (CBr. at 83 (citing Tr. (Akemann) at 400:14-401:4).). This allocation included Roku’s expenditures on the Elk and the Falcon. (*Id.* (citing Tr. (Akemann) at 387:2-6; *id.* at 386:24-387:6, 430:5-23, 435:9-21, 437:4-17).). Dr. Akemann started with all Roku U.S. based departments that had personnel involved in the [REDACTED] [REDACTED] (CBr. at 84 (citations omitted).). From that, Dr. Akemann estimated a headcount to allocate only those individuals who were involved in the [REDACTED] and estimated that to be some [REDACTED] (*Id.* at 84 (citations omitted).). Then, Dr. Akemann used an allocation of [REDACTED] claiming that was an estimate of the expenditures for just the Gazelle remote control (without identifying precisely the underlying figures.). (*Id.* at 84.). From that, Dr. Akemann estimated that Roku’s total

investments in the U.S. [REDACTED]

[REDACTED] (*Id.* at 85 (citations omitted).). [REDACTED]

[REDACTED] (*Id.* at 86 (citing CDX-0004C.0012; Tr. (Akemann) at 413:13-22).).

Although the methodology was not unusual, Dr. Akemann's testimony did not provide the level of clarity or analysis of evidence that would support an allocation of investments to the domestic industry. *Certain Soft-Edged Trampolines and Components Thereof*, Inv. No. 337-TA-908, Comm'n Op. at 56-57 (May 1, 2015.). Neither the testimony nor the evidence Roku offered was sufficiently specific to support its claim that it had a domestic industry in the '875 product at the time it filed its Complaint. Most of the [REDACTED] in DI expenditures for the Gazelle remote, Elk and Falcon taken together, are pre-Complaint filing expenditures that do not distinguish among the three products. Neither the testimony nor the evidence that Roku offered was sufficiently specific and credible so as to support its claim that by the end of discovery, it was in the process of establishing a domestic industry. Moreover, as indicated in the analysis of Roku's technical DI, it is not clear when or if Roku will produce a Gazelle remote control.

2. Roku Cannot Rely on Pre-Complaint Investments and a "License" That Did Not Exist When the Complaint Was Filed

As Respondents have argued, Roku has a related problem. Roku has stated that it purchased the '875 patent through a Patent Purchase Agreement on March 17, 2021, less than a month before Roku filed its Complaint (and in fact 22 days before). (CPBr. at 129; *see* JX-0042C (Patent Purchase Agreement).). According to Roku and [REDACTED]

[REDACTED]
[REDACTED] (*Id.*). Roku did not offer proof of that
conclusory statement. It appears that Roku [REDACTED]
[REDACTED]

[REDACTED] Roku certainly did not offer proof during the Hearing of investments in any Roku
or Roku related products by Omni Singapore (or any other entity, including Phillips) that owned
the '875 patent before Roku purchased it on March 17, 2021. As Respondents have noted, the
timing of any licensing, let alone any such arguments upon which Roku purportedly relies is
suspect. For example, Dr. Balakrishnan relied on the existence of alleged licenses to the '875
patent that he did not see. (*See* RRBBr. at 2 (citing Tr. (Balakrishnan) at 877:11-14, 907:14-
908:11).). Roku's corporate witness, Mr. Clarence Worthington, also testified that [REDACTED]
[REDACTED]

[REDACTED]⁴⁷ (*See* JX-0537C
(Worthington Dep. Tr.) at 103:3-14.).

In other words, Roku appears to have tried through a curious legerdemain, to include pre-
Complaint filing investments made under a licensee that did not exist. As Respondents argued:
Roku cannot do in this case. (RRBr. at 69-70 (citing *Certain Digital Media Devices*, Inv. No.
337-TA-882, ID at 450 (July 7, 2014) (complainant failed to satisfy the economic prong in part
because it relied on 'investments made by [a licensee] which was not a licensed entity at the time
of the investments] and did not petition for review and waived the issue), Comm'n Notice, Doc.
ID 541887 (Sept. 12, 2014); *Certain Devices for Improving Uniformity in a Backlight Module*,

⁴⁷ When he provided his deposition testimony on October 7, 2021, Mr. Clarence Worthington was Vice
President of Operations at Roku. (JX-0537C (Worthington Dep. Tr.) at 10:8-12.). Roku designated Mr.
Worthington to speak on behalf of Roku and himself. (*Id.* at 10:13-17.).

Inv. 337-TA-805, ID at 59 (Oct. 22, 2012) (“the timing of the license agreement is a factor that must be considered in the domestic industry analysis” as such “the patentee is entitled to rely on its licensee’s activities related to the Domestic Industry Products once the license agreement has been executed”), *affirming the ID’s economic prong determination and finding the issue of whether pre-license investments could be considered to be moot*, Comm’n Op. at 26-27 (May 17, 2013).

3. Roku’s “Significance” Evaluation for Its Expenditures on the Gazelle, the Elk or the Falcon Remote Controls Pursuant to 19 U.S.C. § 1337(a)(3)(B) Is Not Supported

According to Roku’s fact and expert witnesses, the sum total that Roku spent on research and development under 19 U.S.C. § 1337(a)(3)(B) for labor and capital in the United States for the three (3) remote controls, i.e., the Gazelle, the Flacon and Elk, [REDACTED] [REDACTED] (Tr. (Akemann) at 413:13-22; CDX-0004C.0012.). Roku’s expert, Dr. Akemann, testified that is “significant” when adding the [REDACTED] that Roku projected would be spent on the [REDACTED] [REDACTED] and when compared with “the overall operation of the Roku streaming platform.” (CBr. at 88 (citing Tr. (Akemann) at 418:18-419:14).). That is not the opinion or finding adopted here. The [REDACTED] that Roku projects it will spend is speculative.

Roku noted in its Pre-Hearing Brief, that as of February 28, 2021, less than two (2) months before it filed its Complaint, Roku employed approximately [REDACTED] in the United States of which [REDACTED] worked in engineering and research and development.” (CPBr. at 127-128.). By the time Roku filed its Post-Hearing Brief, for the first time, Roku claimed that [REDACTED] [REDACTED] are employed in the United States. (CBr. at 81.).

Even if that specificity has not been waived by its untimeliness, the underlying evidence from that headcount is from July 2021 to December 2021, or after the filing of the Complaint and in part, after the close of fact discovery. That information and evidence could only be used as part of an estimate for the industry Roku claims it is establishing, even though some of the figures might reflect expenditures after the close of October 8, 2021 fact discovery. (*See* RRBBr. at 68 n.15.).

Nonetheless, if Roku's belated Post-Hearing Brief headcount number is accepted, then just a headcount percentage or ratio of employees based in the United States who are were working on the Gazelle when compared against the [REDACTED] in the United States who were working on the [REDACTED] project, resulted in less than [REDACTED]
[REDACTED] The percentage working on just the Gazelle would likely be smaller for just 2020 and Q2 of 2021—or the end of fact discovery. While Roku's expert did not offer a "significance" analysis on this ratio, a [REDACTED] figure cannot be significant under *Lelo* given Roku's domestic investment in engineering R&D let alone against its entire U.S. workforce.

Again, without allocating any of its workforce or its gross expenditures to *actual* investments in the Gazelle, the Elk or the Falcon, Roku merely reported that it in [REDACTED]
[REDACTED]
[REDACTED] (*Id.* at 128 (citing JX-0645C (Roku's 9/17/2021 Supp. Interrog. Resp.) at 70).).

Even though none of Roku's witnesses performed a "significance" or a "contextual" analysis of Roku's overly broad [REDACTED] expenditures for its Gazelle, Elk and Falcon across [REDACTED] the mathematic calculation is simple. In comparison with its [REDACTED] in worldwide expenditures for

labor R & D, Roku's [REDACTED]

[REDACTED] cannot be a "significant" investment quantitatively or qualitatively under *Lelo*. [REDACTED] investment in an industry "in the process of being established" does not satisfy the economic prong under 19 U.S.C. § 1337(a)(3)(B). A contextual comparison also reveals the problems with Roku's evidence.

Respondents' expert, Mr. Herrington, opined that Roku's investments were overstated because they likely included impermissible sales and marketing figures that should not be credited to the domestic industry. (RPBr. at 145 (citing Herrington Rpt. at ¶ 23); *Certain Bone Cements*, Inv. No. 337-TA-1153, Comm'n Op. at 22 (Jan. 25, 2021); *see also Certain Solid State Storage Drives, Stacked Electronics Components and Prods. Containing Same*, Inv. No. 337-TA-1097, ID at 11 (U.S.I.T.C. May 11, 2018).).

Respondents argued that the same figures are problematic because they do not include contracting costs that Roku invested in the manufacturing for the three remote controls. (CBr. at 68.). Those costs which Roku omitted are relevant to its domestic industry. *Certain Electronic Candle Prods. and Components Thereof*, Inv. No. 337-TA-1195, Comm'n Op. at 18 (Sept. 13, 2021); *see also Lelo* at 786 F.3d 884-885. Ultimately, Roku's allocation and its expenditures are problematic because they are simply not clear and credible. Roku does not have clear, articulated investments in the Gazelle for any important time frame at issue. It did not conduct a contextual analysis of any type whether Roku's investments on the Gazelle are considered alone, which is not possible, or whether the expenditures for the Gazelle are combined with the Elk and Falcon.

While Roku also reported that in fiscal years 2016 through Q1 2021, it invested more than [REDACTED] in engineering, research and development of its products *in*

the United States—which presumably means all of Roku’s products, i.e., streaming devices, Roku TV, its OS system and the like—Roku claimed broadly that “a significant portion...is allocable to the Domestic Industry Products.” (CPBr. at 128.). Although Roku’s expert devised a [REDACTED] method, that allocation is suspect because it does not involve an appropriate “contextual analysis.” In supporting a “contextual” analysis, the Commission has observed “Commission precedent permits complainants to present evidence of their U.S. investments using methods and approaches that are appropriate the facts of a particular investigation...” *Certain Movable Barrier Operator Sys. and Components Thereof*, 337-TA-1118, Comm’n Op. at 23 (Jan. 12, 2021) (“*Certain Movable Barrier Systems*”) (other citations omitted).

Even though the Commission does not require a “precise accounting” of expenditures, there was not an accurate headcount allocation in this case until after the Hearing, and no contextual analysis of Roku’s R & D expenditures on its Gazelle remote control in comparison with any of Roku’s pertinent expenditures which would give a sense of scale to the Gazelle remote control development to the rest of Roku’s R&D and engineering expenditures whether in the United States or worldwide.

Arguably, because there was no allocation just for the Gazelle until after the Hearing, it can be questioned whether Roku’s allocation was “reasonable.” See *Certain Solid State Storage Drives, Stacked Electronics Components, and Products Containing Same*, Inv. No. 337-TA-1097, Comm’n Op. at 21, 2018 WL 4300500, at *13 (June 29, 2018) (“all that is required is the use of reasonable allocations for the purposes of establishing the economic prong of the domestic industry requirement”).⁴⁸

⁴⁸ The Commission did not state whether the same “reasonable under the circumstances” allocation

While Roku did not perform a necessary contextual analysis,⁴⁹ Roku provided pages of various gross numbers and citations to Dr. Akemann’s Expert Report and financial spreadsheets for the [REDACTED] engineering and research and development from Q1 2019 through Q1 2021, most of which were not relevant. At bottom, Roku could only estimate that [REDACTED] of its employee headcount in the United States would be assigned to work on the three (3) remote controls. Roku’s attempted allocations appear to be high, and as Respondents have argued, are probably unreliable and “overstated.” (RBr. at 70.). Again, there is not a reliable, separate allocation of expenditures for the Gazelle remote control. (CPBr. at 142-143 (citing JX-0872C (Akemann Rep.) at ¶¶ 183-186; CX-0981C (Akemann Rep. Ex. 11b); JPX-0009C (Roku Headcount by Cost Center); JPX-0059C (Roku Employee Detail Spreadsheet); (other citations omitted))). None of Roku’s witnesses actually performed an analysis of employee time actually spent on the Gazelle or Elk and Falcon remote controls. (Tr. (Herrington) at 802:3-803:4.).

In addition, none of Roku’s witnesses performed a “value added” analysis to explain what the Gazelle remote control would add to the Elk and to the Falcon remote controls that would matter for the ’875 patent.

4. Roku Did Not Prove That It Has A “Significant Likelihood” of Establishing a Domestic Industry in the Near Future

Because Roku has failed to show that its activities under 19 U.S.C. § (a)(3)(B) are

would be the same or different for a domestic industry “is in the process of being established” under 19 U.S.C. § 1337(a)(3).

⁴⁹ Roku did not provide evidence of its worldwide manufacturing operations let alone an analysis of even its projected expense projections and their “significance” for its [REDACTED] in the context of Roku’s worldwide manufacturing projections. (See RBr. at 68 (citations omitted)). Roku’s manufacturing costs are unknown.

significant, there is insufficient proof that Roku has a domestic industry that “is in the process of being established.” *See Certain Microlithographic Machines with Control Systems Having Programmable Operator Interfaces Incorporating General Purpose Computs., and Components Thereof*, Inv. No. 337-TA-468, Initial Determination at 368 (Apr. 4, 2003).

Part of Roku’s problem was in the timing of the filing of its Complaint, i.e., just 22 days after it purchased the ’875 patent. Roku’s efforts to bootstrap other investments onto the Gazelle remote control without having distinguished which of the features under development would be incorporated into the Gazelle remote was similarly problematic and unspecific. Ultimately, most of Roku’s expected development rested on speculation, caused in some measure by delays, rather than upon “tangible steps” that Roku had taken or would be taking to establish its domestic industry in products that would practice the ’875 patent. (*See* Section VI.D, *supra*.).

VIII. REMEDY AND BOND

As discussed above, this ID finds there has been no violation of subsection (b) of Section 337 of the Tariff Act of 1930, as amended. However, should the Commission find otherwise, this decision recommends: (1) a Limited Exclusion Order (“LEO”) with a standard certification provision; and (2) a Cease and Desist Order (“CDO”).

A. Legal Standard

Pursuant to Commission Rule 210.42, an ALJ must issue a recommended determination on: (i) an appropriate remedy if the Commission finds a violation of Section 337, and (ii) an amount, if any, of the bond to be posted. 19 C.F.R. § 210.42(a)(1)(ii). When a Section 337 violation has been found, as has been found in this Investigation, “the Commission has the authority to enter an exclusion order, a cease and desist order, or both.” *Certain Flash Memory Circuits and Prods. Containing the Same*, Inv. No. 337-TA-382, Comm’n Op. on the Issues

Under Review and on Remedy, the Public Interest and Bonding, at 26 (June 9, 1997).

B. A Limited Exclusion Order Is Warranted

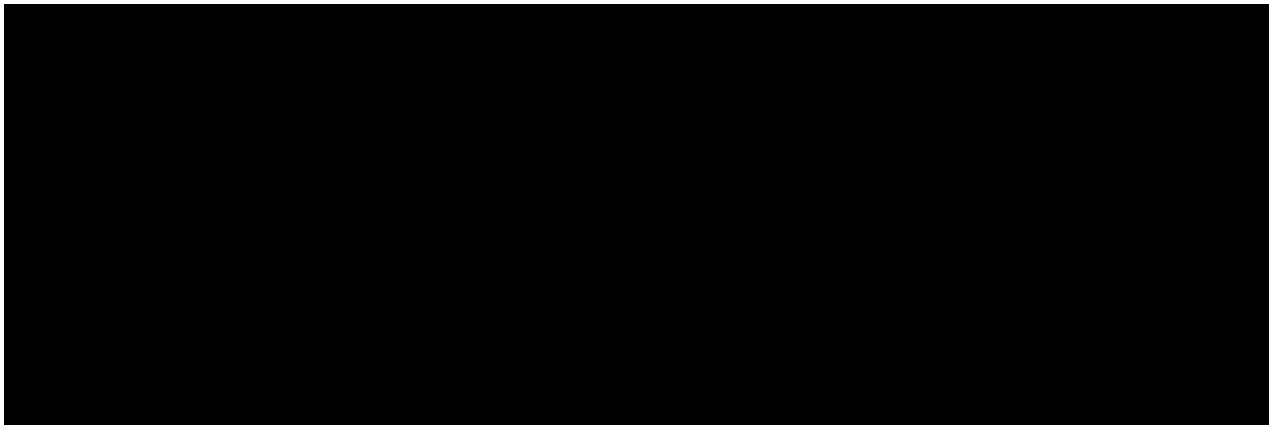
Upon a finding of infringement, the Commission's enabling statute, 19 U.S.C. § 1337(d) provides for a Limited Exclusion Order ("LEO"), that can be directed to any articles that infringe one or more claims of the asserted patent(s) of any of the named respondents. 19 U.S.C. § 1337(d). A limited exclusion order instructs the U.S. Customs and Border Protection ("CBP") to exclude from entry all articles that are covered by the patent at issue that originate from a named respondent in the investigation. *Fuji Photo Film Co. Ltd. v. Int'l Trade Comm'n*, 474 F.3d 1281, 1286 (Fed. Cir. 2007).

In the event that the Commission finds a violation of subsection (b) of Section 337 of the Tariff Act of 1930, as amended, this ID recommends that the Commission issue an LEO containing the standard, customary language used by the Commission, namely that the relief should be directed against infringing articles "manufactured by or on behalf of" or "imported by or on behalf of" any 875 Respondent found to violate Section 337. *Spansion, Inc. v Int'l Trade Comm'n*, 629 F.3d 1331, 1358 (Fed. Cir. 2010). The exclusion order should also cover components, including software, associated with infringing products within the scope of the Investigation. The limited exclusion order should apply to infringing products that are manufactured by, or on behalf of, or are imported by or on behalf of the 875 Respondents or any of their affiliated companies, parents, subsidiaries, agents, or other related business entities, or their successors or assigns. It is important to note that Roku made clear, on record, that only remote controls designed, developed, manufactured, licensed, sold, or imported, by or on behalf of UEI are the only accused products in this investigation. (*See* RX-3390.0001.).

C. A Cease and Desist Order Is Warranted

Section 337 provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a Cease and Desist Order (“CDO”) as a remedy for violation of Section 337. *See* 19 U.S.C. § 1337(f)(1). The Commission generally issues a cease and desist order directed to a domestic respondent when there is a “commercially significant” amount of infringing, imported product in the United States that could be sold so as to undercut the remedy provided by an exclusion order. *See Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, Comm’n Op. on the Issue Under Review, and on Remedy, the Public Interest and Bonding at 37-42, Pub. No. 2391 (U.S.I.T.C., June 1991). Cease and desist orders have been declined when there is no evidence in the record with respect to infringing inventories in the United States. *Certain Condensers, Parts Thereof and Prods. Containing Same, Including Air Conditioners for Automobiles*, Inv. No. 337-TA-334, Comm’n Op. at 28 (U.S.I.T.C. Aug. 27, 1997).

Here, a CDO is appropriate for each of the 875 Respondents because they each maintain a commercially significant inventory in the United States. (Tr. (Akemann) at 373:6-11.). The 875 Respondents admitted in interrogatory responses that they had the following inventories of the 875 Accused Products in the United States as of the dates indicated:



(JX-0807C (UEI's 7th Suppl. Resp. to 1st Interrog. (Oct. 8, 2021)) at 39-40; 12-33, 118-19; JX-0794C (Altice Respondents' 3rd Suppl. Responses to 1st Interrog. (Oct. 7, 2021)) at 16-17, 19; JX-0796C (Charter Respondents' 2nd Suppl. Responses to 1st Interrog. (Oct. 7, 2021)) at 19; JX-0812C (WOW Respondents' 2nd Suppl. Responses to 1st Interrog. (Oct. 9, 2021)) at 18-19; CDX-0004C.002.).

As Dr. Akemann explained, a reasonable measure of whether these inventories are commercially significant is to: (a) calculate the respective inventory-to-sales ratios for each of the Respondents using the admitted inventories along with sales and purchase records; and (b) compare those ratios to the average inventory-to-sales ratio across the manufacturing sector as a whole. (Tr. (Akemann) at 373:13-17, 377:3-22.). As Dr. Akemann demonstrated using data provided by the U.S. Department of Commerce, as of August 2021, manufacturers on average had an inventory-to-sales ratio of 1.47, meaning that their inventory represented, on average, 1.47 months of sales. (*Id.* at 373:24-374:18; JX-0729 (Manufacturers: Inventories to Sales Ratio, Oct. 15, 2021)).

Dr. Akemann testified that he calculated the inventory-to-sales ratios for each of the Respondents using data provided by the Respondents in discovery, and that for each of the Respondents the ratio was substantially higher than the industry average of 1.47. Specifically, he found that [REDACTED]

[REDACTED] (Tr. (Akemann) at 375:12-376:10, 377:3-378:3; CDX-0004C.0002; CX-0992C; CX-0993C; CX-0994C; CX-0995C; JX-0807C at 39-40; JPX-0020C; JX-0796C at 19; JX-0794C at 16-17; JX-0275C; JX-0276C; JX-0277C; JX-0812C at 18-19; JX-0612C; JX-0215C to JX-0221C.).

Based on this analysis, Dr. Akemann concluded that each of the Respondents have a commercially significant inventory of Accused Products in the United States since they each have an inventory-to-sales ratio that is substantially higher than the industry average. (Tr.

(Akemann) at 377:3-19.).

D. A Bond During the Presidential Review Period Is Not Warranted

During the Presidential Review Period, imported articles otherwise subject to a remedial order are entitled to conditional entry under bond. *See Certain Beverage Dispensing Sys. & Components Thereof*, Comm'n Opinion, Inv. No. 337-TA-1130 at 26 (Mar. 26, 2020) (citing 19 U.S.C. § 1337(j)(3)). The amount of bond is determined by the Commission and must be enough to protect the complainant from any injury. *See id.* “The Commission typically sets the bond based on the price differential between the imported infringing product and the domestic industry article or based on a reasonable royalty. However, where the available pricing or royalty information is inadequate, the bond may be set at one hundred (100) percent of the entered value of the infringing product.” *Certain Loom Kits for Creating Linked Articles*, Inv. No. 337-TA-923, Comm’n Op., 2015 WL 5000874, *11 (citations omitted).

Complainant bears the burden of establishing the need for a bond, including the amount of bond. *See, e.g., Certain Rubber Antidegradants, Components Thereof & Prods. Containing Same*, USITC Pub. No. 3975, Inv. No. 337-TA-533, Comm’n Opinion at 40 (April 2008); *Certain Coenzyme Q10 Prods. and Methods of Making Same*, Inv. No. 337-TA-790, Initial and Recommended Determination (Sept. 27, 2012) (recommending Commission not impose a bond because complainant failed in its burden to demonstrate the appropriate bond amount); *Certain Mobile Telephones and Wireless Commc’n Devices Featuring Digital Cameras, and Components Thereof*, Inv. No. 337-TA-703, Recommended Determination (Jan. 24, 2011) (recommending no bond because complainant did not meet its burden in providing evidence on the necessity of a bond); *Certain Liquid Crystal Display Devices and Prods. Containing the Same*, Inv. No. 337-TA-631, Comm’n Opinion at 27-28 (July 14, 2009) (setting zero bond

because complainant “simply claimed that it was impossible to conduct a price differential analysis” and “should not benefit from a lack of any effort to identify” relevant pricing information, particularly that which is in its possession).

The Commission frequently sets the bond based on the difference in sales prices between the patented domestic product and the infringing product. *See, e.g., Microsphere Adhesives*, Inv. Comm’n Opinion at 24 (Jan. 1996). In other instances, when a direct comparison between a patentee’s product and the accused product is not possible, the Commission has set the bond at a reasonable royalty rate. *See, e.g., Certain Integrated Circuit Telecommunication Chips and Prods. Containing Same, Including Dialing Apparatus*, Inv. No. 337-TA-337, Comm. Opinion at 41-43 (Aug. 3, 1993). Commission precedent allows for a 100 percent bond when it is not practical or possible to set the bond based on price differential. *Certain Voltage Regulators, Components Thereof and Prods. Containing Same*, Inv. No. 337-TA-564, Comm’n Opinion at 79 (Public Version Oct. 19, 2007). The purpose of the bond is to protect the complainant from any injury. 19 U.S.C. § 1337(j)(3); 19 C.F.R. §§ 210.42(a)(1)(ii), 210.50(a)(3).

In its Post-Hearing Brief, Roku stated that “in order to simplify the issues, Roku has decided to forego the seeking of a bond.” (CBr. at 99.). Thus, a bond during the Presidential Review Period is not warranted.

IX. AFFIRMATIVE DEFENSES

The Respondents filed Affirmative Defenses in their Responses to the Complaint that were identical in number and content.⁵⁰ The ’875 Respondents adduced information during the

⁵⁰ The pertinent Responses to the Complaint and Notice of Investigation are limited to those Respondents whose products were accused of infringing the ’875 patent. They are: Respondent Charter Communications, Inc., Charter Communications Operating, LLC, and Spectrum Management Holding Company LLC’s Response to Roku, Inc.’s Complaint and Notice of Investigation Doc. ID No. 744593

Hearing with respect to their: First Affirmative Defense (Invalidity); Second Affirmative Defense (Non-Infringement), Third Affirmative Defense (Lack of Domestic Industry); and Fourth Affirmative Defense (Lack of Unfair Act). The evidence for each of these Affirmative Defenses and whether burdens of proof have been met are discussed in other sections of this initial determination.

The Respondents did not either adduce evidence or discuss in Pre-Hearing or Post-Hearing Briefs their: Sixth Affirmative Defense (Inventorship); Seventh Affirmative Defense; Seventh Affirmative Defense Improper Adjustment or Extension of Patent Term; Eighth Affirmative Defense (Relief Not in the Public Interest); Ninth Affirmative Defense (Express or Implied License) and Tenth Affirmative Defense (Other). If the finding that there has not been a violation of Section 337 is upheld, then the Eighth Affirmative Defense is moot. Otherwise, the Commission will ask for briefing on the public interest. Any other argument about an express or implied license is waived or abandoned pursuant to Ground Rule 10.1. The Tenth Affirmative Defense (Other) that the 875 Respondents asserted had no factual or theoretical content. As a result, that Defense, together with the Sixth through Ninth Defenses are waived or abandoned pursuant to Ground Rule 10.1.

X. FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Jurisdiction and standing requirements are satisfied.

(June 11, 2021); Respondent Altice USA, Inc., Cablevision Systems Corp, and Cequel Communications LLC D/B/A Suddenlink Communications' Response to Roku, Inc.'s Complaint as Amended and Notice of Investigation, Doc. ID No. 744597 (June 11, 2021); Respondent Universal Electronics, Inc., Universal Electronics BV, UEI Brasil Controles Remotos Ltda., Gemstar Technology (Quinzhou) Co., Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., and CG Mexico Remoto Controls, S.de RI de CV Response to Roku, Inc.'s Complaint as Amended, and Notice of Investigation. Doc. ID No. 744606 (June 11, 2021); Respondent WideOpenWest Inc.'s Response to Roku, Inc.'s Complaint as Amended, and Notice of Investigation, Doc. ID No. 744639 (June 11, 2021).

2. Claim 5 of U.S. Patent No. 7,388,511 is invalid as indefinite.
3. Claims 1-5, 8-10, and 14 of U.S. Patent No. 8,378,875 are invalid.
4. Claims 1-5, 8, and 10 are satisfied by the Representative Accused Products.
5. Claim 9 is satisfied by Representative Accused Products Altice/Charter Pulse RF Remote (URC 2068) and WOW Experience Remote (URC 2135).
6. Roku's domestic activities with respect to its DI Product have been found to not satisfy the economic prong of the domestic industry requirement under 19 U.S.C. § 337(a)(3)(B).
7. Roku's DI Product does not practice any of the claims of U.S. Patent No. 8,378,875.
8. If the Commission finds that one or more of the Respondents have violated subsection (b) of Section 337 of the Tariff Act of 1930, this decision recommends: (1) a Limited Exclusion Order with a standard certification provision; and (2) a Cease and Desist Order.

The lack of discussion of any matter raised by the Parties, or any portion of the record, does not indicate that it has not been considered. Rather, any such matter(s) or portion(s) of the record has/have been determined to be irrelevant, immaterial or meritless. Arguments made on briefs, which were otherwise unsupported by record evidence or legal precedent, have been accorded no weight.

XI. INITIAL DETERMINATION

This Initial Determination on Violation of Section 337 of the Tariff Act of 1930 is certified to the Commission. All orders and documents, filed with the Secretary, including the exhibit lists enumerating the exhibits received into evidence in this Investigation, that are part of the record, as defined in 19 C.F.R. § 210.38(a), are not certified, since they are already in the Commission's possession in accordance with Commission Rules. *See* 19 C.F.R. § 210.38(a). In

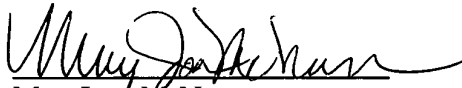
accordance with 19 C.F.R. § 210.39(c), all material found to be confidential under 19 C.F.R. § 210.5 is to be given *in camera* treatment.

Pursuant to 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. § 210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the Initial Determination or certain issues therein.

Within fourteen (14) days of the date of this document, the Parties shall submit to the Office of Administrative Law Judges through McNamara337@usitc.gov a joint statement whether or not they seek to have any portion of this document deleted from the public version. The Parties' submission must include a copy of this ID with yellow highlighting, with or without red brackets, indicating any portion asserted to contain CBI to be deleted from the public version. The Parties' submission shall also include an index identifying the pages of this document where proposed redactions are located. The Parties' submission concerning the public version of this document need not be filed with the Commission Secretary.

After the Parties have provided proposed redactions of confidential business information ("CBI") to McNamara337@usitc.gov that Chambers has evaluated and accepted, the Secretary shall serve a public version of this ID upon all parties of record. The Secretary shall serve a confidential version upon counsel who are signatories to the Protective Order (Order No. 1)

SO ORDERED.


MaryJoan McNamara
Administrative Law Judge

**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 1

CONFIDENTIAL CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **INITIAL DETERMINATION** has been served upon the following parties as indicated, on **June 28, 2022**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
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de C.V., Cablevision Systems Corp., Cequel
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Charter Communications Holdings LLC, Charter
Communications Inc., Gemstar Technology (Qinzhou) Co.
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**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 2

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF

Inv. No. 337-TA-1263

**ORDER NO. 29: GRANTING-IN-PART, DENYING-IN-PART
RESPONDENTS' MOTION *IN LIMINE* NOS. 1 AND 2
[MOTION DOCKET NOS. 1263-017, 1263-018]; DENYING
RESPONDENTS' MOTION *IN LIMINE* NO. 3 [MOTION
DOCKET NO. 1263-019]**

(January 14, 2022)

I. INTRODUCTION

Complainant Roku, Inc. ("Roku") was limited to three (3) motions *in limine* ("MIL") and/or high priority objection ("HPO").¹ (*See* Order No. 4 at 3 (May 26, 2021).). Respondents² as a group were also limited to three (3) MILs and/or HPOs. (*See id.*).

On December 14, 2021, Respondents filed six (6) MILs. (Motion Docket No. 1263-017 (Dec. 14, 2021) ("MIL No. 1"); Motion Docket No. 1263-018 (Dec. 14, 2021) ("MIL No. 2");

¹ Roku did not file any MILs or HPOs.

² Respondents refers collectively to Universal Electronics Inc., Gemstar Technology (Qinzhou) Co. Ltd., Gemstar Technology (Yangzhou) Co. Ltd., C.G. Development Ltd., Universal Electronics BV, UEI Brasil Controles Remotos Ltda., and CG México Remote Controls, S. de R.L. de C.V. (collectively, "UEI"); LG Electronics Inc., and LG Electronics USA, Inc. (collectively, "LG"); Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. (collectively, "Samsung"); Charter Communications, Inc., Charter Communications Operating, LLC, and Spectrum Management Holding Company, LLC (collectively, "Charter"); Altice USA, Inc., Cablevision Systems Corp., and Cequel Communications, LLC d/b/a Suddenlink Communications (collectively, "Altice"); and Wideopenwest, Inc. ("WOW," and with UEI, LG, Samsung, Charter, and Altice, the "Respondents.").

Motion Docket No. 1263-019 (Dec. 14, 2021) (“MIL No. 3”); Motion Docket No. 1263-020 (Dec. 14, 2021) (“MIL No. 4”); Motion Docket No. 1263-021 (Dec. 14, 2021) (“MIL No. 5”); Motion Docket No. 1263-022 (Dec. 14, 2021) (“MIL No. 6”).). Because Respondents did not move for leave to exceed the limit set forth in Order No. 4, Respondents’ MIL Nos. 3-6 were stricken. (*See* Order No. 24 (Dec. 27, 2021)). Only MIL Nos. 1-3 (“Respondents’ MILs”) have been considered and are ruled upon in this Order.³

In their MIL No. 1, Respondents seek to preclude Roku from relying during the evidentiary hearing (“Hearing”) on exhibits that Roku produced after the ordered close of fact discovery.⁴ (MIL No. 1 at 1.). Respondents state that “[t]hese exhibits s include at least the untimely production of publicly available YouTube videos and online forum posts from various websites, screenshots of IP web addresses, and dictionary definitions.” (*Id.*).

In their MIL No. 2, Respondents seek to exclude Roku’s “late disclosed” domestic industry evidence for U.S. Patent No. 8,378,875 (“the ’875 patent”). (MIL No. 2 at 2.). Specifically, Respondents move to exclude:

1. “exhibits on Roku’s exhibit list that were produced after the close of fact discovery and testimony regarding the same” (“Category 1”);
2. “testimony regarding a prototype that may or may not be created in December 2021” (“Category 2”); and
3. “testimony regarding alleged developments of the Gazelle after the close of fact discovery” (“Category 3”).

(*Id.* at 2-3.).

³ Respondents also filed a memorandum in support of MIL No. 1 (“Mem. MIL No. 1”) and MIL No. 2 (“Mem. MIL No. 2”).

⁴ The close of fact discovery was October 8, 2021. (*See* Order No. 6, Att. A at iii (June 8, 2021)).

In their MIL No. 3, Respondents seek to preclude Roku from offering evidence or testimony relating to tests Mr. David Mendenhall, a Roku employee, conducted at the direction of trial counsel. (MIL No. 3 at 1.). According to Respondents:

Roku’s counsel instructed Mr. Mendenhall . . . to run a specific test as purported evidence that Roku has itself “used” the method of Claim 5 of the 511 Patent in order to support its domestic industry allegations. But, at the same time, Roku claimed privilege on why he ran the test, what he was instructed to do, and the notes he took during the tests.

(*Id.*).

Respondents contend that Roku should be precluded from using privilege as both a “sword and a shield.” (*Id.*).

Respondents have certified pursuant to Ground Rule 2.2 that they made good faith efforts to resolve its differences with Roku before filing their MILs. (MIL No. 1 at 2; MIL No. 2 at 3; MIL No. 3 at 5.).

On December 21, 2021, Roku filed oppositions to Respondents’ MIL No. 1 (“Opp’n No. 1”), MIL No. 2 (“Opp’n MIL No. 2”), and MIL No. 3 (“Opp’n MIL No. 3”). (Doc. ID Nos. 759073 (Dec. 21, 2021) (Opp’n MIL No. 1), 759087 (Dec. 21, 2021) (Opp’n MIL No. 2), 759030 (Dec. 21, 2021) (Opp’n MIL No. 3).).

For the reasons discussed below, Respondents’ MIL Nos. 1 and 2 are *granted-in-part* and *denied-in-part*, and Respondents’ MIL No. 3 is *denied*.

II. DISCUSSION

1. Respondents’ MIL No. 1: Granted-in-Part, Denied-in-Part

In their MIL No. 1, Respondents seek to preclude from admission into evidence certain late produced documents that Respondents say Roku produced after the close of fact discovery on October 8, 2021. (MIL No. 1 at 1.). Specifically, Respondents seek to preclude what they

describe as three different sets of late documents that Roku variously produced on October 21, 2021 and on November 11, 2021 without requesting leave to do so, and some of which Respondents also say are unreliable. The documents for which Roku seeks preclusion are: (1) YouTube videos, CPX-001 and CPX-002; (2) “online forum posts,” CX-1128 to CX-1147; and (3) certain IP server address screenshots and dictionary definitions upon which Roku’s experts, Dr. Ravin Balakrishna and Dr. Samuel H. Russ, hope to rely, i.e., CX-1003, CX-1004, CX-1007 and CX-1124-1126. (MIL No. 1 at 2-3.). It is apparent that virtually all, if not all, of the exhibits Respondents seek to preclude from evidence deal with evidence of Respondents’ alleged direct and/or induced infringement of Roku’s U.S. Patent No. 7, 388,511 (“the ’511 patent”). Additionally, Respondents seek to prevent Drs. Balakrishna and Rush from testifying with respect to precluded exhibits.

In its Opposition to Respondents’ MIL No. 1, Roku argues that Respondent UEI produced at least two exhibits, CX-1124 and CX-1125, from its own log files. (Opp’n MIL No. 1 at 1.). With respect to user videos, i.e., CPX-00001 and CPX-0002, Roku simply repeats who the “bloggers” or “blog posters” are who produced the YouTube videos and other on-line posts, how they identify themselves, and how they describe how they figured out to use Accused Products without any clear discussion of why such late-produced exhibits are reliable or authentic. (*Id.* at 4-5.). With respect to the latter, Roku argues that while Dr. Russ did only produce the blog posts with his expert report, nonetheless they support the general statements contained in Roku’s contention interrogatory responses that users of the Accused Products have directly infringed the ’511 patent. Roku apparently believes that “blog posts” and “online videos” are self-identifying, or because the experts have reviewed them, they do not require authentication pursuant to Commission (or other) evidentiary rules. (*Id.* at 5, 6.).

With respect to the dictionary definitions, CX-1003, 1004, 1007, and 1126, Roku says that Drs. Balakrishna and Rush produced them in conjunction with their expert reports. (*Id.* at 6.). As Roku argues, Respondents had an opportunity to question Drs. Balakrishna and Rush in depositions.

Roku filed its *fact documents* late. The Procedural Schedule exists for a reason—not to be flouted as parties choose, and certainly not to be evaded by simply producing late documents without leave. Moreover, blanket “reservations of rights” have no place in an evasion of a court order such as a Procedural Schedule. As Respondents observe, “[t]he requirements of the Procedural Schedule are not optional.” (Mem. MIL No. 1 at 4 (quoting *Certain Replacement Auto. Serv.*, Inv. No. 337-TA-1160, Order No. 22 at 2 (Dec. 31, 2019) (“*Automotive Service*”)).). *See also Certain Electrochemical Glucose Monitoring Sys.*, Inv. No. 337-TA-1075, Order No. 11 at 3 (Feb. 13, 2018) (“*Glucose Monitoring*”) (explaining that the requirements of the Procedural Schedule “are deadlines, not guidelines”). “[A]dherence to the Procedural Schedule is particularly important in an ITC Investigation where time is compressed by the nature of the proceedings and thus, at a premium.” *Glucose Monitoring*, Order No. 11 at 3. Roku had ample opportunity to produce the documents that now will be precluded. Merely because something appears on the internet does not make it true or self-authenticating.

The only documents in this instance that do not clearly fall within this prohibition are the dictionary definitions upon which Drs. Balakrishna and Rush rely as part of their expert reports, i.e., CX-1126, CX-1003, 1004 and 1007. Drs. Balakrishna and Rush seemingly, appropriately and timely, included definitions as part of expert report explanations. Therefore, that part of Respondents MIL No. 1 is *denied* with respect to the identified documents.

Additionally, *if* UI produced Exhibits CX-1124 and 1125 before the close of fact discovery (which is not clear) then, they too, will be allowed into evidence, and that part of Respondents' MIL No. 1 also is *denied provisionally*. If the UI documents were not produced before the close of fact discovery, they will be precluded and that part of Respondents' MIL No. 1 is *granted*.

The remainder of Respondents' identified documents, i.e., CPX-0001, CPX-0002, and CX-1128-1147, are precluded from admission into evidence. No one will be permitted to testify with respect to those documents/exhibits. That part of Respondents' MIL No. 1 is *granted*. This Order should not be construed as an order on the merits.

For the foregoing reasons, Respondents' MIL No. 1 is *granted-in-part* and *denied-in-part*.

2. Respondents' MIL No. 2: Granted-in-Part, Denied-in-Part

With respect to Category 1, Respondents state that "Roku's exhibit list includes 40 exhibits related to the Gazelle remote that were produced well after the close of fact discovery (October 8, 2021)." (Mem. MIL No. 2 at 1.). According to Respondents, Roku plans to use the exhibits in support of Roku's domestic industry contentions. (*Id.*). Respondents point out that the exhibits "were all produced between 35 or 62 days after Roku's final contentions were due," and "between 14 or 41 days after the close of fact discovery[.]"⁵ (*Id.*; *see also id.* at 1-3 (chart of the exhibits showing the dates on which they were produced)). Because of their "untimeliness," Respondents seek to exclude

⁵ Final domestic industry contentions were due September 17, 2021. (*See* Order No. 6, Att. A at iii (June 8, 2021)).

them and testimony regarding the same. (*Id.* at 1, 7.).

With regard to Category 2, Respondents contend that Roku should be precluded from introducing any testimony during the Hearing relating to any prototype developed after the fact discovery cutoff date for the following reasons:

- “Roku did not produce any prototype of the Gazelle remote during fact discovery. . . . Thus, Respondents have not had an opportunity to inspect, test, or provide meaningful analysis of the allegedly forthcoming prototype.” (Mem. MIL No. 2 and 3-4 (internal citation omitted).).
- “Respondents diligently pursued discovery regarding operational prototypes and samples of the Gazelle remote” but “were repeatedly told by Roku’s witnesses that operational prototypes and samples were not available.” (*Id.* at 4.).
- After being told by Roku’s corporate representative/Gazelle project manager, Mr. Nino Marino, and Roku’s corporate witness/director of engineering for the Gazelle, Mr. Tito Thomas, that Roku expected [REDACTED] [REDACTED] respectively, Roku alleged for the first time in its Pre-Hearing Brief that “Roku expects to have a working prototype implementing [the features of the ’875 Patent] [REDACTED]” (*Id.* at 3-4 (quoting MIL No. 2 at Ex. 4 (Marino Dep.) at 131:5-132:10; Doc. ID No. 758122 (Roku’s Prehearing Brief) at 51-52) (citing MIL No. 2 at Ex. 7 (Thomas Dep.) at 67:1-8).).

With regard to Category 3, Respondents seek to exclude testimony regarding allegations that certain developments occurred after the close of fact discovery. (*See* Mem. MIL No. 2 at 4-5 (citing MIL No. 2 at Ex. 2 (excerpts from Decl. of Jeffrey Peters (Dec. 10, 2021))).). According to Respondents, “Roku has not produced any of these documents to Respondents.” (*Id.* at 5, 7.).

In support of their MIL No. 2, Respondents rely on *Certain Digital Cameras, Software, and Components Thereof*, Inv. No. 337-TA-1059, Order No. 59 at 5 (Feb. 26, 2018) (“*Digital Cameras*”). (Mem. MIL No. 2 at 5-6.). Order No. 59 granted the

respondents' motion *in limine* to exclude the complainants' late-produced prototype, late-produced domestic industry evidence, and "any argument pertaining to the same." *Id.*

In its Opposition to Respondents' MIL No. 2, Roku argues that there are 26 exhibits in dispute⁶ that fall into one of the following general groups: (1) updated versions of documents that were previously produced prior to the close of fact discovery ("Group 1") (*see* Opp'n MIL No. 2 at 7-8 (chart of the disputed exhibits showing the dates on which the previous versions were produced); *see also id.* at 9); (2) documents that did not exist when fact discovery closed ("Group 2") (*see id.* at 9-10 (chart of exhibits showing when they were created and when they were produced); and (3) documents that were produced in conjunction with Dr. Michael R. Akemann's expert report ("Group 3") (*see id.* at 11-12).⁷

As Roku points out, the facts in this Investigation are not "identical" to those in *Digital Cameras*, as Respondents allege. (*Id.* at 5.). Thus, blanket exclusion of all documents produced after the close of fact discovery is not warranted. The documents in

⁶ Roku states that "[i]n order to simplify the issues and to remove some duplicative Exhibits, Roku agrees to remove the following Exhibits (listed in the order they appear on pages 1-3 of the present motion) from Complainant's Exhibit List: CX-0656C; CX-0657C; CX-0658C; CX-0659C; CX-0667C; CX-0669; CX-1371C; CX-1377C; CX-1385C; CX-1386C; CX-1387C; CX-1388C; CX-1389C and CPX-0094C." (Opp'n MIL NO. 2 at 7 n.3.). Thus, with respect to these exhibits, Respondents' MIL No. 2 is moot.

⁷ Roku argues that because it has alleged that "Roku is in the process of establishing a domestic industry with respect to the '875 patent by developing the Gazelle Remote," post-complaint evidence is appropriate. (Opp'n MIL No. 2 at 3-4.). Although the Commission has considered evidence of DI activities conducted after the filing of the complaint, there is sound precedent that evidence produced after discovery, which would have severely prejudiced the opposing party, has been excluded. *See, e.g., Digital Cameras*, Order No. 59 at 5; *Certain Silicon-on-Insulator Wafers* ("Silicon Wafers"), Inv. No. 337-TA-966, Order No. 15 at 18 (May 9, 2016); *Certain Digital Models*, Inv. No. 337-TA-833, Order No. 32 at 4 (Jan. 24, 2013).

Group 1 that are truly “updates” of documents that had been previously produced *prior to* the close of fact discovery are not excluded. In addition, the three (3) documents in Group 3 that were produced the same day Roku served Dr. Akemann’s expert report and considered in his opinions, i.e., CX-0660C, CX-0661C, and CX-0666C, are not excluded. As Roku notes, Respondents had an opportunity to question Dr. Akemann about these documents but chose not to depose him. (*Id.* at 8, 11-2.). Moreover, it appears that Mr. Ryan N. Herrington, Respondents’ expert, considered these exhibits with respect to his own expert report and directly cited two (2) to support his opinions. (Opp’n MIL No. 2, Ex. 3 (Herrington Rep.) at ¶¶ 95, 97.). Accordingly, these aspects of Respondents’ MIL No. 2 are *denied*.

However, any documents in Group 1, listed on pages 7-8 of Roku’s Opposition, which Roku describes as being “similar to previously produced documents representing work performed *after* the close of discovery,” are excluded as untimely. (Opp’n MIL No. 2 at 7 (emphasis added).). Thus, that part of Respondents’ MIL No. 2 is *granted*. By *close of business January 18, 2022*, Roku is instructed to file on EDIS, and send a copy to McNamara337@usitc.gov, a list of such documents so that there is no ambiguity regarding which documents from Group 1 are excluded by this Order.⁸

The documents in Group 2, i.e., CX-0665C, CX-0671C, CX-1382C, CX-1383C, and CPX-0093C, are also excluded as untimely. (Opp’n MIL No. 2 at 9-10.). *See, e.g., Digital Cameras*, Order No. 59 at 5; *Silicon Wafers*, Order No. 15 at 18. As Respondents

⁸ Roku did not specifically identify which exhibits are “updated versions” of documents produced prior to the close of fact and which are “similar to previously produced documents” relating to work conducted after the close of fact discovery. (Opp’n MIL No. 2 at 7-8.).

observe, “[t]he requirements of the Procedural Schedule are not optional.” (Mem. MIL No. 2 at 5 (quoting *Automotive Service*, Order No. 22 at 2.). *See also Glucose Monitoring*, Order No. 11 at 3. Furthermore, Respondents would be severely prejudiced if Roku is permitted to introduce the untimely exhibits or testimony regarding those exhibits during the Hearing. As Respondents state, they had no opportunity to examine any fact witnesses with respect to the information contained in those documents. (Mem. MIL No. 2 at 7-8 (citing CX-1383C, one of the documents Roku identified as falling in Group 2)). Thus, that part of Respondents’ MIL No. 2 is *granted*.

Similarly, with respect to the prototype mentioned in Roku’s Pre-Hearing Brief, Roku is precluded from introducing any testimony related to the prototype during the Hearing. As Respondents point out, “Roku never made an operational prototype available to Respondents” during fact or expert discovery. (*Id.* at 8.). Thus, that part of Respondents’ MIL No. 2 is *granted*.

With regard to Mr. Peters’ December 10, 2021 Declaration, Mr. Peters alleges that Roku: [REDACTED]

[REDACTED]

[REDACTED] (Mem. MIL No. 2 at 8 (citing MIL No. 2, Ex. 2 at ¶¶4-8)). As Respondents note, these developments occurred *after* the close of fact discovery. (*Id.*). Moreover, as Respondents point out, “[n]one of these materials were ever produced to Respondents—not during fact discovery and not even to date.” (*Id.* (emphasis in original)). Accordingly, Roku is precluded from introducing any testimony regarding alleged

developments of the Gazelle after the close of fact discovery. That part of Respondents' MIL No. 2 is *granted*.

For the foregoing reasons, Respondents' MIL No. 2 is *granted-in-part*. Exhibits in Group 1 regarding work performed after the close of fact discovery, which Roku will clarify by closed of business January 18, 2022, are excluded. Additionally, all exhibits in Group 2, i.e., CX-0665C, CX-0671C, CX-1382C, CX-1383C, and CPX-0093C, are excluded. Roku is also precluded from introducing any testimony during the Hearing regarding any a prototype of the Gazelle or developments of the Gazelle that occurred after the close of fact discovery.

For the reasons discussed above, Respondents' MIL No. 2 is also *denied-in-part*. Exhibits in Group 1 that are updated versions of documents produced prior to the close of fact discovery are not excluded. Similarly, the exhibits produced in conjunction with Dr. Akemann's expert report, i.e., CX-0660C, CX-0661C, and CX-0666C, are not excluded. The weight of the disputed exhibits will be credited or discounted based on the evidence elicited during the Hearing as subject to appropriate evidentiary rules.

3. Respondents' MIL No. 3: Denied

Respondents assert that during his deposition, Mr. Mendenhall testified that he conducted two (2) tests allegedly relevant to Roku's domestic industry allegations with respect to the '511 patent, and that Mr. Mendenhall took notes during his tests. (MIL No. 3 at 1 (citing *id.* at Ex. A (Mendenhall Dep.) at 59:20-60:23, 69:5-6).). According to Respondents, during the deposition, "Roku's counsel instructed Mr. Mendenhall not to answer questions about why he was doing what he was doing and refused to share Mr. Mendenhall's notes" on the basis of privilege. (*Id.* at 2-3.). Respondents argue that Roku should not be permitted to "use Mr. Mendenhall's testing as a 'sword' to evidence the alleged practice of Claim 5 of the 511 Patent, while simultaneously

utilizing an alleged privilege to ‘shield’ Respondents from learning the facts and circumstances behind Mr. Mendenhall’s tests.” (*Id.* at 4.).

In its Opposition, Roku included deposition testimony supporting its position that “Roku allowed Mr. Mendenhall to testify at length about the details of his testing related to Roku’s domestic industry allegations in response to Respondents’ questions at his deposition, while properly asserting attorney-client privilege with respect to questions that sought disclosure of specific attorney-client communications between counsel and Mr. Mendenhall.” (Opp’n MIL No. 3 at 1, 2-7.). The quoted testimony confirms that Roku properly asserted privilege with regard to specific communications between Roku’s counsel and Mr. Mendenhall related to his testing, including emails between counsel and Mr. Mendenhall.

Moreover, as Roku notes, Respondents will not be prejudiced by Mr. Mendenhall’s deposition testimony because they will have the opportunity to cross examine him about his testing during the Hearing. (*Id.* at 1, 8 (citing *Certain RF Capable Integrated Circuits*, Inv. No. 337-TA-982, Order No. 26 at 12 (Mar. 9, 2017) (denying Respondents’ motion *in limine* to preclude a witness from testifying about product simulation due to allegedly improper claims of privilege during his deposition and stating that “Respondents may of course cross-examine Dr. Steer about the basis of his opinions.”)). Mr. Mendenhall’s testimony will be subject to other appropriate evidentiary objections.

For the foregoing reasons, Respondents’ MIL No. 3 is *denied*.

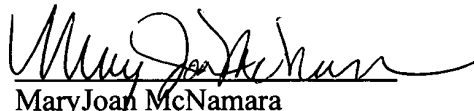
III. CONCLUSION

For the reasons discussed above, Respondents’ MIL Nos. 1 and 2 are hereby *granted-in-part* and *denied-in-part*, and Respondents’ MIL No. 3 is hereby *denied*. None of the rulings should be considered as an evaluation or conclusion on the merits.

Within seven (7) business days of the date of this document, each party shall submit to the Office of the Administrative Law Judges through McNamara337@usitc.gov a statement whether or not it seeks to have any confidential portion of this document redacted from the public version. That is the courtesy copy pursuant to Ground Rule 1.3.2. Any party seeking redactions to the public version must submit to this office through McNamara337@usitc.gov a copy of a proposed public version of this document pursuant to Ground Rule 1.10 with yellow highlighting clearly indicating any portion asserted to contain confidential business information.

The Parties' submissions concerning the public version of this document need not be filed with the Commission Secretary.

SO ORDERED.


MaryJoan McNamara
Administrative Law Judge

**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 1

CONFIDENTIAL CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served upon the following parties as indicated, on **January 14, 2022**.



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**CERTAIN TELEVISIONS, REMOTE CONTROLS, AND
COMPONENTS THEREOF**

Inv. No. 337-TA-1263

Certificate of Service – Page 2

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF

Inv. No. 337-TA-1263

ORDER NO. 30: CONSTRUING CERTAIN TERMS OF U.S. PATENT NO.
7,388,511 (MARKMAN CLAIM CONSTRUCTION)

(January 14, 2022)

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Table of Abbreviations

Compl.	Complaint
CMBr.	Complainant's Initial <i>Markman</i> Brief
RMBr.	Respondents' Initial <i>Markman</i> Brief
CSMBr.	Complainant's Supplemental <i>Markman</i> Brief
RSMBr.	Respondents' Supplemental <i>Markman</i> Brief
CXM	Complainant's <i>Markman</i> Exhibit
RXM	Respondents' <i>Markman</i> Exhibit
JXM	Joint <i>Markman</i> Exhibit
MHr'g Tr.	<i>Markman</i> Hearing Transcript

I. BACKGROUND

On May 14, 2021, the Commission instituted this Investigation pursuant to subsection (b) of Section 337 of the Tariff Act of 1930, as amended, to determine:

[w]hether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products identified in paragraph (2) by reason of infringement of one or more of claims 1-5, 8-11, and 14 of the '875 patent and claim 5 of the '511 patent¹ [.]

86 Fed. Reg. 26542 (May 14, 2021).

The Notice of Investigation (“NOI”) names as complainant: Roku, Inc. of San Jose, CA. (“Roku”). *Id.* at 26543. The NOI names as respondents: Universal Electronics, Inc. of Scottsdale, AZ; Gemstar Technology (Qinzhou) Co. Ltd. of Guangxi Province, China; Gemstar Technology (Yangzhou) Co. Ltd. of Jiangsu Province, China; C.G. Development Ltd. of Kowloon, Hong Kong; Universal Electronics BV of Enschede, Netherlands; UEI Brasil Controles Remotos Ltda. of Manaus—Amazonas—Brasil; CG México Remote Controls, S. de R.L. de C.V. of Nuevo Leon, Mexico; LG Electronics Inc. of Seoul, Republic of Korea; LG Electronics USA, Inc. of Englewood Cliffs, NJ; Samsung Electronics Co., Ltd. of Gyeonggido, Republic of Korea; Samsung Electronics America, Inc. of Ridgefield Park, NJ; Charter Communications, Inc. of Stamford, CT; Charter Communications Operating, LLC of St. Louis, MO; Spectrum Management Holding Company, LLC of Stamford, CT; Altice USA, Inc. of Long Island City, NY; Cablevision Systems Corp. of Bethpage, NY; Cequel Communications, LLC d/b/a Suddenlink Communications of Long Island City, NY; Wideopenwest, Inc. of Englewood, CO (collectively, “Respondents,” and with Roku, the “Parties”). *Id.*

On July 26, 2021, pursuant to Order No. 6 (“Adopted Procedural Schedule”), the Parties

¹ The asserted patents are U.S. Patent Nos. 8,378,875 (“the ‘875 patent’”) and 7,388,511 (“the ‘511 patent’”). 86 Fed. Reg. 26542.

filed a Joint Claim Construction Chart (“JCC”). The JCC contains the 3 agreed upon claim terms and the 11 disputed claim terms that the Parties asked to be construed. (Doc. ID No. 747906 (July 26, 2021)). On August 13, 2021, the Parties filed a First Amended Claim Construction Chart containing the same numbers of agreed upon and disputed claim terms. (Doc. ID No. 749539 (Aug. 13, 2021)).

Additionally, each of the Parties filed a *Markman* Brief. (CMBr., Doc. ID No. 749589 (Aug. 16, 2021) (Roku); RMBr., Doc. ID No. 749576 (Aug. 13, 2021) (Respondents)).

Pursuant to Order No. 11, a *Markman* hearing was held on August 19, 2021 (“*Markman* Hearing”). (Order No. 12 (Aug. 13, 2021); *see also* MHR’g Tr., Doc. ID No. 750009 (Aug. 20, 2021)). On August 31, 2021, the Parties filed a Post-Hearing Joint Claim Construction Chart. (Doc. ID No. 750582 (Aug. 31, 2021)).

On September 7, 2021, each of the Parties filed a Supplemental *Markman* Brief. (CSMBr., Doc. ID No. 751125 (Sept. 7, 2021) (Roku); RSMBr., Doc. ID No. 751127 (Sept. 7, 2021) (Respondents)).

Pursuant to Order No. 12, a continuation of the *Markman* Hearing was held on September 14, 2021 (“Continuation”). (Order No. 12 (Aug. 31, 2021); *see also* MHR’g Tr., Doc. ID No. 751681 (Sept. 15, 2021)). The Continuation of the *Markman* Hearing provided the Parties with an opportunity to present arguments that were not addressed in the August 19, 2021 *Markman* hearing and to buttress their “indefiniteness” arguments. (Order No. 12 at 1.).

II. THE ASSERTED PATENT AND CLAIMS AT ISSUE

A. The ’875 Patent

The ’875 patent is entitled “Method of Programming a Universal Remote Control.” (JXM-0001 at (54)). The ’875 patent is based on PCT Application No. PCT/B2007/050714, filed on March 5, 2007, and claims priority to European Patent Application No. 06111201, filed

on March 15, 2006. (*Id.* at (21), (22), (30).). The '875 patent issued on February 19, 2013 and names Michael Walter Paul D'Hoore, Juergen Forscht, and Rogier Louis Jacques Willem Thissen as the inventors. (*Id.* at (45), (72).). Roku owns by assignment all right, title and interest and to the '423 patent. (*See* Compl. at ¶ 68, Ex. 3.).

The '875 patent is generally directed to an improved universal remote control and method of setting up a universal remote control. (Compl. at ¶ 71; *see also* JX-0001 at Abstract.). The improved method includes the steps of entering a configuration mode, accepting an identifier entry, and scanning through remote control code-sets. (JXM-0001 at 2:51-54.). The step of scanning comprises: in case that the identifier entry is a brand-identifier, iterating through the remote control code sets corresponding to the brand and testing the remote control code-sets, and in case that the identifier-entry is a code-set-identifier, testing the remote control code-set corresponding to the code-set-identifier. (*Id.* at 2:54-60.).

B. The '511 Patent

The '511 patent is entitled "System for Remote Control of Identical Devices." (JXM-0002 at (54).). The '511 patent is based on PCT Application No. PCT/BO2/04604, filed on October 31, 2002, and claims priority to European Patent Application No. 01204612, filed on November 29, 2001. (*Id.* at (21), (22), (30).). The '511 patent issued on June 17, 2008 and names Frank Amand as the sole inventor. (*Id.* at (45), (72).). Roku owns by assignment all right, title and interest and to the '423 patent. (*See* Compl. at ¶ 74, Ex. 4.).

The '511 patent is generally directed to a system that allows the remote control signal to operate on only the intended device by use of a coding device that adds a device identifier to the user command. (Compl. at ¶ 76; *see also* JXM-0002 at Abstract.). When the controllable devices receive a control signal, each device examines the device identifier in the control signal

to determine if the command is addressed to it, and will respond to the command only if the identifier matches its own identifier. (JXM-0002 at 3:40-53.).

III. ADOPTED CLAIM TERMS

A. Agreed Claims Terms for the '875 Patent²

Claim Term(s)	Adopted Construction
“though” in the phrases “scanning, via the processor and memory, though remote control code-sets” (claims 1, 10, 11) and “scanning though remote control code-sets” (claim 14)	Through ³
“in case that the identifier-entry is a brand-identifier . . . and in case that the identifier-entry is a code-set-identifier” (claims 1, 10, 14)	Must be capable of performing both/either conditional step as opposed to a system/method that could only perform one of the two conditional steps
“means for entering a configuration mode” (claim 14)	This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: entering a configuration mode Structure: keyboard 40 as shown in Fig. 7 and as described at 9:7-8 and 6:7-11 of the '875 patent, and equivalents thereof.

B. Disputed Claim Terms⁴

1. The '511 Patent

a. “A method for remote control of at least two like controllable devices, the method comprising” (claim 5)

² The Parties did not agree on any claim terms for the '511 patent.

³ The Parties agreed that the word “though” in claims 1, 10, 11, and 14 is a clerical error and should be understood as “through.” (CMBR. at 6; RMBR. at 4.).

⁴ The claim construction for the disputed claim terms of the '875 patent will be addressed at a later date, most likely prior to the start of the evidentiary hearing.

Roku's Proposed Construction	Respondents' Proposed Construction	Adopted Construction
The preamble is not limiting except for the phrase “at least two like controllable devices.” The term “like controllable devices” should be construed as discussed below. No further construction is required.	The preamble is limiting	Except for the phrase “at least two like controllable devices,” the preamble is not limiting.

As the Parties agree, the portion of the preamble that recites “at least two like controllable devices” is limiting as it provides antecedent basis for the phrase “one of the like controllable devices” in the body of claim 5. (*See* JXM-0002 at cl. 5). At issue, however, is whether the preamble in its entirety is limiting. The Federal Circuit has stated that “there is no ‘litmus test’ for determining whether a preamble is limiting.” (*Eli Lilly and Co. v. Teva Pharms. Int’l GmbH*, 8 F.4th 1331, 1340 (citing *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006))). “Rather, ‘[w]hether to treat a preamble as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent.’” (*Id.* (quoting *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003))).

The Federal Circuit has made clear that an entire preamble may not necessarily be limiting just because a portion of it provides antecedent basis. *See Tom Tom, Inc. v. Adolph*, 790 F.3d 1315, 1323-24 (Fed. Cir. 2015). Here, the “for remote control of” language in the preamble does not recite essential structure or steps, or give necessary life, meaning, and vitality to the claim, as the body of claim 5 is fully understandable and complete without it.⁵ Specifically, the body of claim 5 already recites steps of the method where a remote control device sends a user-

⁵ This is true to the extent claim 5 is found not to be indefinite.

specified command to a coding device, which then sends a device identifier and the user-specified command to one of the like controllable devices.

b. “like controllable devices” (claim 5)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
Two or more devices which can be controlled by the same signal emitted from a remote control. However, the devices need not be identical.	“two or more devices that can be controlled by the same signals emitted from a remote control. The devices must be of the same type, however, the devices need not be identical”	Two or more devices which can be controlled by the same signal emitted from a remote control. However, the devices need not be identical.

Nothing in the specification justifies limiting this term to devices of the same type as Respondents propose. The specification discloses various consumer electronics products that can be remote-controllable devices, such as TVs, VCRs, and DVD recorders. (JXM-0002 at 1:15-29, 5:16-18 (“The controllable devices may include televisions, VCRs or other electronic appliances or devices capable of receiving the infrared signals.”)). As Roku points out, televisions and VCRs are different types of devices. The specification further discloses complications when the controllable devices are fairly close together and a signal of the remote control may reach both a targeted controllable device and another controllable device. (*Id.*). The specification explains that “[t]his situation may occur in the showrooms of shops, exhibition pavilions, studios with professional electronics equipment, home theaters and other places with controllable devices, like TVs, VCRs, digital versatile disk (DVD) recorders, etc.” (*Id.* at 1:25-29). Again, these are different types of devices. The specification further clarifies that “[s]ometimes, such remote control systems involve two or more controllable devices, which may be identical.” (*Id.* at 1:19-21). However, the specification also states that “[i]t is assumed that the controllable devices

could be conventional controllable devices and are not necessarily identical.” (*Id.* at 2:6-8). The specification therefore contemplates that the controllable devices may not be identical or of the same type.

The prosecution history does not compel a different result. (*See Digital-Vending Servs. Int’l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1276 (Fed. Cir. 2012) (explaining that “it is particularly important not to limit claim scope based on statements made during prosecution absent a clear disavowal or contrary definition”)). When the claim was amended during prosecution to include the term “like controllable devices,” the applicant provided the example of a remote control that could operate both a DVD player as well as a newer DVD/VCR combination unit. (JXM-0004.0134-35.). The applicant also explained that “[d]ue to the universality of the command signals, signals intended for one TV or other electronic component cause like unwanted reactions in others.” (*Id.*). Thus, there is no evidence that the patentee clearly intended to require identical devices or devices of the same type.

In addition, the language of claim 5 does not require that the controllable devices receive multiple signals. Specifically, claim 5 recites “with one of the like controllable devices, receiving the device identifier and the user-specified command in combination.” (JXM-0002 at cl. 5). Thus, the claim language itself does not require more than one signal. The specification is consistent with this understanding. For example, in one embodiment, the specification explains that the transmitting means of the coding device transmits a signal incorporating the user-specified command and the device identifier. (*Id.* at 3:36-39).

- c. **“c) with one of the like controllable devices, receiving the device identifier and the user-specified command in combination; extracting the device identifier; comparing said extracted device identifier with a further device identifier for identification of the controllable device; refraining from further operation with the received user-specified command if**

said identifiers do not match; and supplying the user-specified command if said identifiers do match”⁶ (claim 5)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
One of the like controllable devices (as construed above) receives the device identifier and the user-specified command together, extracts the device identifier, compares the extracted device identifier with an identifier of the controllable device, and if those identifiers do not match, refrains from acting on the received user-specified command, but if those identifiers do match, the controllable device supplies the user specified command.	Step “c)” is a required step of the claim under either condition of the “wherein the step of transmitting . . .” clause.	Step c) is a required step of the claim.

For this disputed term, Roku offers a proposed construction while Respondents contend that step c) is a required step under either condition of the “wherein the step of transmitting . . .” clause. As an initial matter, Roku’s proposed construction does not assist in determining the meaning of this limitation as it essentially restates the claim language. Nor do the Parties assert that they cannot understand the scope or meaning of this limitation. Thus, Roku’s proposed construction is not adopted.

The remaining dispute centers on whether step c) is required, no matter if the remote control device and coding device are connected or disconnected. While the “wherein the step of transmitting . . .” clause is written as a conditional limitation (*i.e.*, doing one thing when the remote control device and coding device are disconnected and doing another thing when they are

⁶ This claim limitation is herein referred to collectively as “step c).”

connected), step c) is not written as a conditional limitation. (*See* JXM-0002 at cl. 5). In fact, the Parties agree that step c) is a required step of the claim that has to be performed. (*See* RMBR. at 52; CMBR at 29 (“For the purposes of step (c), both Roku and Respondents are in agreement that step (c) is a required portion of the claim.”); Saunders, MHR’g Tr. at 302:21-23 (“Roku agrees that steps (b) and (c) are parts of the claim, that they have to be performed.”); CXM-0011 at ¶ 48 (“In particular, it is my understanding that because step(b) and step(c) of claim 5 are not written in conditional or contingent format, they must be performed to perform the method of claim 5, and it is my understanding that both sides in this Investigation agree on that issue.”)). It is therefore clear from the language of claim 5 that step c) is a required step of the claim.^{7, 8}

- d. **“wherein the step of transmitting the user specified command further includes: transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected” (claim 5)**

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
When the remote control device and the coding device are disconnected, the user-specified command is transmitted directly from the remote control device to at least the like controllable devices.	The claim indefinite under 35 U.S.C. § 112. The requirement that the “step of transmitting ... further includes” requires that each of the two transmitting steps be performed based on the stated conditions to practice the claimed method.	The claim is indefinite under 35 U.S.C. § 112.

⁷ Roku argues that “a method claim (such as claim 5 of the ‘511 patent) can be satisfied by performing the claimed method without performing the contingent limitation when the condition of that contingent limitation is not satisfied.” (*See* CMBR at 29-30). This, however, is an infringement argument that is not germane to determining what this claim limitation means.

⁸ The Parties’ dispute regarding the “wherein the step of transmitting . . .” limitation is addressed separately.

<p>When the remote control device and the coding device are connected, the user-specified command and the device identifier are transmitted from the coding device to at least the like controllable devices.</p> <p>“connected” means “having a link”</p> <p>“disconnected” means “such link is broken”</p>	<p>In the event this term is not indefinite, “connected” means “the coding device is added onto (i.e., physically interconnected with) the remote control device</p> <p>In the event this term is not indefinite, “disconnected” means “the coding device is not added onto (i.e., is not physically interconnected with) the remote control device.</p>	
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In *Nautilus, Inc. v. Biosig Instruments, Inc.*, the Supreme Court held that § 112 requires “that a patent’s claims, viewed in light of the specification and prosecution history inform those skilled in the art about the scope of the invention with reasonable certainty.” (*Nautilus*, 572 U.S. 898, 910 (2014)). A claim is required to “provide objective boundaries for those of skill in the art,” and a claim term is indefinite if it “might mean several different things and no informed and confident choice is among the contending definitions.” (*Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014)).

As an initial matter, the phrase “the step of transmitting the user specified command” in this limitation is indefinite for lack of antecedent basis. While failure to provide explicit antecedent basis for terms does not always render a claim indefinite, *see, e.g., Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006), here, the meaning of the claim is not discernable because of the ambiguous antecedent basis for the term “the step of transmitting the user specified command.”⁹ In claim 5, there are theoretically two options for

⁹ The facts of *Energizer* are not analogous to the facts here. First, in *Energizer*, none of the parties asserted that they could not understand the intended claim scope because of the lack of an antecedent. (*Energizer*, 435 F.3d at 1371). Second, it was apparent in *Energizer* that “said zinc anode” referred to the earlier recited “anode gel.” (*Id.*) In contrast, here, it is not clear what “the step of transmitting the user

antecedent basis for that phrase: (i) “transmitting the user-specified command” in step a), or (ii) “transmitting the device identifier and the user-specified command in combination” in step b).¹⁰ (See JXM-0002 at cl. 5). While the phrase in step a) recites the same exact language as the “wherein” clause and would be a clear choice for antecedent basis, Roku instead argues that “the step of transmitting the user specified command” refers to either step a) or step b), depending on whether the remote control device and coding device are connected or disconnected. (See CMBR. at 36-37). Roku, however, does not present any authority establishing that antecedent basis can be so conditioned. To be sure, neither step a) nor step b) are written in conditional language. (See JXM-0002 at cl. 5).

Moreover, it would not be clear to a person of ordinary skill in the art which antecedent is referred to when read in the context of the claims and specification because the options relate to the actions of two different devices – the remote control device or the coding device – and neither option makes sense in the context of the claim. (See RXM-0020 at ¶ 54-56). For example, if “transmitting the user-specified command” in step a) is the correct antecedent to be modified, then there would be a conflict with the second condition in the “wherein” clause. In that scenario, the “transmitting” phrase in step a) would be referring to the remote control device transmitting whereas the second condition in the “wherein” clause would be modifying that to add the coding device transmitting. (See CXM-0011 at ¶ 49). In addition, if “transmitting the device identifier

specified command” refers to as there are multiple options for an antecedent, and the parties do not agree that the intended claim scope is understandable.

¹⁰ The limitation “with a remote control device, inputting a user-specified command for controlling the controllable devices; and transmitting the user-specified command” is herein referred to collectively as “step a).” The limitation “with a coding device, receiving the user-specified command from the remote control device; adding to the user-specified command a device identifier for identification of at least one of the controllable devices; transmitting the device identifier and the user-specified command in combination” is herein referred to collectively as “step b).”

and the user-specified command in combination” in step b) is the correct antecedent to be modified, then there would be a conflict with the first condition in the “wherein” clause. In that scenario, the “transmitting” phrase in step b) would be referring to the coding device transmitting whereas the first condition in the “wherein” clause would be modifying that to add the remote control device transmitting. (*See id.*).

Even if Roku’s position were adopted, a person of ordinary skill in the art would not be able to ascertain with reasonable certainty, what the claim is meant to cover in a scenario where the remote control device and coding device are disconnected.¹¹ (*See* RSMBR. at 7; Saunders, Tr. at 301:6-10.). For instance, in such a scenario, the user-specified command is allegedly transmitted from the remote control device to controllable devices. However, when reaching step c), which as discussed above is a required step of the claim, a person of ordinary skill in the art would not know whether or how the controllable devices would extract the device identifier, compare device identifiers, and either supply the user-specified command or refrain from further operation. (*See* RXM-0020 at ¶ 59). Step c) makes clear that the determination of whether to supply the user-specified command or refrain from further operation, is based on whether the device identifiers match. In a scenario where no device identifier is transmitted, it would be unclear to a person of ordinary skill in the art what the outcome of step c) would be.¹² Thus, it is

¹¹ Roku contends that “claim 5 cannot be performed in the ‘disconnected’ state and therefore ‘transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected’ is effectively rendered surplusage.” (*See* CMBR. at 35; *see also* CXM-0011 at ¶ 48). However, this language is not merely “surplusage” as Roku contends. As explained above, it contradicts how the invention allegedly operates. Moreover, it would not be evident to a person of ordinary skill in the art that the disconnected state is surplusage, particularly given that the claim also recites “wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable.” (*See* JXM-0002 at cl. 5).

¹² The claim does not recite, for example, whether the controllable devices either refrain from further operation or supply the user-specified command when the user-specified command is transmitted from the remote control device to controllable devices.

unclear whether and how step c) can be performed in the condition where the remote control device and coding device are disconnected.

This prevents claim 5 from having a reasonably ascertainable meaning. Therefore, a person of ordinary skill in the art reading the claim, in light of the specification and prosecution history, could not with reasonable certainty, discern the meaning of this limitation. Accordingly, this limitation renders claim 5 indefinite under § 112.

e. “wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable” (claim 5)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
The remote control device and the coding device are not the same device. The remote control device and the coding device are capable of being connected and disconnected (as “connected” and “disconnected” are defined above).	Indefinite under 35 U.S.C. § 112. In the event this term is not indefinite, “wherein the remote control device and the coding device are separate devices wherein the coding device can be selectively added onto (i.e., physically interconnected with) or not added onto the remote control device”	The remote control device and the coding device are not the same device. The remote control device and the coding device are capable of being connected and disconnected. “connected” means “having a link” “disconnected” means “such link is broken”

This limitation, viewed in light of the specification and prosecution history would inform a person of ordinary skill in the art about its scope with reasonable certainty. (*See Nautilus*, 572 U.S. at 910). First, the Parties agree that the remote control device and coding device are separate devices. In addition, a person of ordinary skill in the art would understand the terms “connected”

and “disconnected” and would understand that those terms are not limited to physical connections (CXM-0011 at ¶ 51).

Nor do the claims or specification require physical connections between the remote control device and the coding device. Claim 5 recites that the remote control device and coding device may be disconnected or connected, but does not limit those to physical connections. (JXM-0002 at cl. 5). In addition, the specification refers to the ability for the coding device to “communicate” with the remote control device. (*Id.* at 2:17-21 (“It is also supposed by the receiving and transmitting means of the coding and decoding devices are suitable to communicate with the receiving and transmitting means of the remote control device and controllable devices.”), 3:66-4:10 (“The coding and decoding devices can be implemented separately from the remote control device and controllable devices. In this case, the coding device may include receiving means for obtaining the user-specified command from the remote control device, and the decoding device may include transmitting means for supplying the user-specified command to the controllable device. However, there is a requirement that said receiving means of the coding device can communicate with the transmitting means of the remote control device and said transmitting means of the decoding device can communicate with the receiving means of the controllable device.”). The specification also provides the example that “the coding device may be designed to receive the infrared signals produced by the remote control device.” (*Id.* at 5:11-20). Thus, the specification clearly contemplates an embodiment with a connection that is not a physical connection, and thus, the claims should not be limited to exclude that embodiment. (*See Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1277 (Fed. Cir. 2008) (“At least where claims can reasonably be interpreted to include a specific embodiment, it is

incorrect to construe the claims to exclude that embodiment, absent probative evidence to the contrary.”)).

f. “transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected”¹³ (claim 5)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
When the remote control device and the coding device are disconnected, the user-specified command is transmitted directly from the remote control device to at least the like controllable devices (as “disconnected” is defined above).	“transmitting the user-specified command directly, without an intermediary device, from the remote control device to controllable devices when the coding device is disconnected,” wherein the phrase “when the coding device is disconnected,” if not indefinite means: “when the coding device is not added onto (i.e. is not physically interconnected)”	When the remote control device and the coding device are disconnected, the user-specified command is transmitted directly from the remote control device to controllable devices.

The Parties agree that when the coding device is disconnected from the remote control device, the user-specified command is transmitted directly from the remote control device to the controllable devices. In addition, there is no justification for adding the limitation “without an intermediary device” as Respondents propose. First, claim 5 does not recite that the method is performed without an intermediary device. (*See JXM-0002* at cl. 5). And while at least some of the embodiments in the specification do not mention an intermediary device, there is nothing in the intrinsic evidence to support limiting the claims to those embodiments. (*See Liebel-Flarsheim*

¹³ This claim term is part of the “wherein the step of transmitting . . .” limitation discussed above, which was found to be indefinite. To the extent the “wherein the step of transmitting . . .” limitation is found not to be indefinite, the proper construction for this term is presented here.

Co. v. Medrad, Inc., 358 F.3d 898, 913 (Fed. Cir. 2004); *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) (“While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims.”)). Thus, Respondents’ attempt to so limit this term is rejected.

IV. TERMS CONSTRUED IN THIS ORDER

A. Claim Construction and Current Ground Rules

Claim terms are construed in this Order solely for the purposes of this Section 337 Investigation. Only claim terms in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Vanderlande Indus. Nederland BV v. Int’l Trade Comm.*, 366 F.3d 1311, 1323 (Fed. Cir. 2004); *Vivid Tech., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

As the Investigation proceeds, including during the evidentiary hearing (“Hearing”) scheduled to be held January 19-21, 24-25, 2022, the Parties will be limited to the constructions adopted in this Order. Ground Rule 1.14 states that “[t]he parties will be bound by their claim construction positions set forth on the date they are required to submit a joint list showing each party’s final proposed construction of the disputed claim terms and will not be permitted to alter these absent a timely showing of good cause.” Modified or new constructions set forth for the first time in post-hearing briefs will be considered waived unless a party agrees with the other on a construction, thereby conceding its position.

Similarly, it will not be appropriate for any party to seek additional claim construction during the Hearing or merely to state that a claim term that may be implicated in an expert report or expert testimony has either a “plain or ordinary” meaning. (*See* G.R. 1.14.). If any party posits a “plain and ordinary meaning,” it must be explained with a detailed rationale. (Order No. 9 at 2.). More to the point, there should not be any new, let alone previously disclosed claim

terms that have an alleged “plain and ordinary” meaning without clear explanations. *Iipse dixit* arguments are not sufficient.

V. APPLICABLE LAW¹⁴

A. Claim Construction Generally

Claim construction begins with the language of the claims themselves. Claims should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art, viewing the claim terms in the context of the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). In some cases, the plain and ordinary meaning of claim language is readily apparent and claim construction will involve little more than “the application of the widely-accepted meaning of commonly understood words.” *Id.* at 1314. In other cases, claim terms have a specialized meaning and it is necessary to determine what a person of ordinary skill in the art would have understood disputed claim language to mean by analyzing “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, as well as the meaning of technical terms, and the state of the art.” *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

The claims themselves provide substantial guidance with regard to the meaning of disputed claim language. *Phillips*, 415 F.3d at 1314. “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Similarly, other claims of the patent at issue, regardless of whether they have been asserted against respondents, may show the scope and meaning of disputed claim language. *Id.*

¹⁴ The constructions of the disputed claim terms in Claim B of Appendix A generally follow and apply the law as described above. To the extent possible, the case law that applies to a construction is either identified explicitly, or implicitly in adopting a party’s argument or construction.

In cases in which the meaning of a disputed claim term in the context of the patent's claims is uncertain, the specification is the "single best guide to the meaning of a disputed term." *Id.* at 1321. Moreover, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Id.* at 1316. As a general rule, however, the particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Id.* at 1323.

The prosecution history may also explain the meaning of claim language, although "it often lacks the clarity of the specification and thus is less useful for claim construction purposes." *Id.* at 1317. The prosecution history consists of the complete record of the patent examination proceedings before the U.S. Patent and Trademark Office ("PTO"), including cited prior art. *Id.* The prosecution history may reveal "how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.*

If the intrinsic evidence is insufficient to establish the clear meaning of a claim, a court may resort to an examination of the extrinsic evidence. *Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.*, 206 F.3d 1408, 1414 (Fed. Cir. 2000). Extrinsic evidence may shed light on the relevant art, and "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317. In evaluating expert testimony, a court should disregard any expert testimony that is conclusory or "clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent." (*Id.* at 1318.). Moreover, expert testimony is only of assistance if, with respect to the disputed claim language, it identifies what the accepted meaning in the field would be to one

skilled in the art. *Symantec Corp. v. Comput. Assocs. Int’l, Inc.*, 522 F.3d 1279, 1289 n.3., 1290-91 (Fed. Cir. 2008). Testimony that recites how each expert would construe the term should be accorded little or no weight. *Id.* Extrinsic evidence is inherently “less reliable” than intrinsic evidence, and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Phillips*, 415 F.3d at 1318-19.

Extrinsic evidence is a last resort: “[i]n those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

VI. PERSON OF ORDINARY SKILL IN THE ART

A. Legal Standard

A hypothetical person is a person of ordinary skill and “ordinary creativity.” *KSB Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 420 (2007). “Factors that may be considered in determining [the] level of ordinary skill in the art include: (1) the educational level of the inventor[s]; (2) type of problems encountered in the art; (3) prior art solutions to the problems; (4) rapidity with which inventions are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs Ltd. v. Union Oil Co. of California*, 713 F.2d 693, 696-97 (Fed. Cir. 1983) (citations omitted). “These factors are not exhaustive but merely a guide to determining the level of ordinary skill in the art.” *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).). The hypothetical person of skill is also separately presumed to have knowledge of all the relevant prior art in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 693, 697 (Fed. Cir. 1983).

B. The ’875 and ’511 Patents

Roku has proposed that as of the earliest filing dates of the ’875 and ’511 patents, a person of ordinary skill in the art would have had “a bachelor’s degree in electrical engineering,

computer science, or equivalent degree with two years of work experience relating to communications or consumer electronics.” (CMBr. at 4-5 (citing CXM-0012 (Balakrishnan Decl.) ¶12; CXM-0011 (Russ Decl.) ¶ 15.)).

Respondents have proposed that as of the relevant priority date of each patent, a person of ordinary skill in the art would have had “a bachelor’s degree that involved coursework in interface design and computer programming, for example, electrical engineering, computer engineering, computer science, industrial engineering, physics, or a similar degree, and at least one year of real-world work experience in the field of user interfaces, human machine interface, or software programming,” and added that “[a]dditional education might substitute for some of the experience, and substantial experience might substitute for some of the educational background.” (RMBr. at 2.).

The Parties’ definitions are very similar, each requiring a bachelor’s degree in, *inter alia*, electrical engineering and computer science, and at least one or two years of experience in similar areas. It is expected that the differences among the definitions will have little, if any, effect on the claim construction analysis. Thus, all of the proposals are appropriate for a person of ordinary skill in the art for both the ’875 and ’511 patents.

VII. PROCEEDINGS GOING FORWARD

A. Supplementation in Response to This Order

The Parties may not file supplemental expert reports in response to this Order. No additional discovery will be permitted because of this Order. No re-argument of the claims construed in this Order may occur.

As the Parties proceed in this Investigation, they will be expected to notify Chambers of any issues that have become moot or have been eliminated for any reason through a filing on EDIS. The Parties’ required outlines that must identify any issues, claims, defenses, prior art,

theories, or any other content that was originally asserted or argued, should identify all issues or contentions and claims that have been dropped or become moot for any reason.

The Parties should redact from expert reports and from any other documents upon which they intend to rely any issues, claims, defenses, prior art, theories, or any other content that has been rendered moot or disallowed as a result of this or other Orders, or termination from this Investigation of patent claims or allegations. The Parties must file on EDIS any expert reports or other documents upon which they intend to rely that have been redacted for the reasons stated above, and send copies to Chambers via McNamara337@usitc.gov.

B. Streamlining the Investigation

To the extent that this *Markman* Order will enable the Parties to streamline the Investigation, the Parties are encouraged to resolve promptly each issue in this Investigation for which there is no reasonable dispute or little, or weak, evidentiary support.

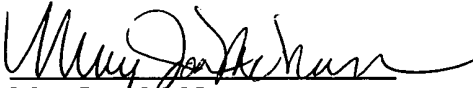
C. Settlement

It is strongly recommended that the Parties take informal opportunities to engage in settlement.

VIII. CONCLUSION

Constructions of the disputed claim terms are hereby adopted by this Order.

SO ORDERED.


MaryJoan McNamara
Administrative Law Judge

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

**CERTAIN TELEVISIONS, REMOTE
CONTROLS, AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1263

**ORDER NO. 32: CONSTRUING CERTAIN TERMS OF U.S. PATENT NO.
8,378,875 (MARKMAN CLAIM CONSTRUCTION II)**

(January 21, 2022)

Order No. 30, which issued on January 14, 2022, adopted the three (3) agreed upon claim terms of U.S. Patent No. 8,378,875 (“the ’875 patent”) and construed the six (6) disputed claim terms of U.S. Patent No. 7,388,511 (“the ’511 patent”). (*See* Order No. 30 (Jan. 14, 2022).).

This Order construes the remaining five (5) disputed claim terms of the ’875 patent. (*See id.* at 4 n.4.). Order No. 30 is incorporated herein by reference.

1. The ’875 Patent

- a. “a configuration mode . . . accepting . . . scanning” (claims 1, 10, 14)/ “a configuration mode . . . scanning . . . testing . . . replacing . . . combining” (claim 11)**

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
Claims 1 and 14 require entering “a configuration mode,” “accepting” an identifier entry, and “scanning” through remote control code-sets Claim 11 requires entering “a configuration mode,”	a mode that includes the accepting and scanning steps within that mode (cl. 1, 14) a mode that includes the scanning, testing, replacing, and combining steps within that mode (cl. 11)	entering a “configuration mode,” “accepting an identifier entry,” and “scanning” through remote control code-sets entering a “configuration” mode, “scanning,” “testing,” “replacing” and “combining”

“scanning,” “testing,” “replacing,” and “combining”		
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As Roku notes, one primary difference between Roku’s and Respondents’ proposed constructions is that Respondents would require that each of the “processing steps,” “accepting,” “scanning” “testing” “replacing” and “comprising” must take place within the same configuration mode. (CMBr. at 8; RMBr. at 6.). Respondents have articulated additional differences for its own proposed construction. Respondents argue that the claim structure also is clear that all of the steps of claim 11, i.e., “scanning” “testing” “replacing” and “combining” must occur in a particular order and refer back to a previous, “antecedent” step. (RMBr. at 8-11.). Respondents argue that the “final ‘combining’ step” cites to “the scanned remote control code-set,” which refers back to a previous step, and therefore, the structure should recognize the “necessary order.” (*Id.* at 9 (citing *Kaneka Corp. v. Xiamen Kingdomway Grp. Co.*, 790 F.3d 1298, 1306 (Fed. Cir. 2015))).

In this instance, Roku’s impliedly “plain and ordinary” meaning that excludes the additional “within that mode” is adopted. (CMBr. at 8 (citing *K-2 Corp. v. Salomon, S.A.*, 191 F.3d 1356, 1362-63 (Fed. Cir. 1999))). Although, clearly, there are certain sequential steps in the event that a user can program a remote control quickly with a “brand identifier” versus one of the other identifiers (and in other specific steps), the claim language does not require the importation of the words “within that [same] mode” such that each of the identified steps must be performed in one mode or “in that some mode” that is the first step in each claim. (CMBr. at 8.). Moreover, neither the specification nor Figure 5 dictate a certain order of steps, other than “scanning” after “accepting.” The specification states: “The steps are shown in FIG 5 and may actually be in a different order in different embodiments.” (*See* JXM-0001 at 6:1-6.). Moreover,

Figures 5 and 6 are each described as showing different steps to configure a URC (i.e., universal remote control). (*Id.* at 5:21-24.). As additional reasons to reject Respondents’ proposed construction, Complainant/patentee did not “define” the claim limitations with its own lexicography, and Respondents did not offer evidence of a clear disclaimer that would prevent a “plain and ordinary” meaning from applying. (CMBr. at 8 (citing *Thorner v. Sony Computer Ent. Am.*, LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012))). In this instance, Respondents’ construction would import a limitation from what Respondents suggest is from a preferred embodiment. This would be inappropriate. (*See* RMBr. at 12; CMBr. at 9 (citing *Hill-Rom Services, Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014))). While it may be true that there may not be an embodiment that describes “entering...a configuration mode” after any of the other described steps, that does not mean that the order of steps as Respondents describe is required by the claims. (*See* RMBr. at 12.). Here, finally, patentee’s European patent arguments are not significant to the construction of the terms of the ’875 patent and the Federal Circuit has cautioned against using them. (*See* RMBr. at 12-13; CMD, ’875 Patent at 8 (citing *AIA Eng’g. Lt. v. Magotteaux Int’l. SIA*, 657 F3d 1264, 1279 (Fed. Cir. 2011))).

b. “identifier-entry” (claims 1, 9, 10, 14)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
entry of an identifier	a brand-identifier, a code-set identifier, or wild card, wherein a brand-identifier and code-set identifier have the same format such that, to a user, a code-set-identifier appears to be a brand-identifier	entry of an identifier

As Roku argues correctly, the “plain and ordinary meaning” does not require either a limitation to three (3) types of identifiers, or to a “requirement” that brand identifiers and code-set identifiers must have the same format. (CMBr. at 10 (citing *Hill-Rom*, 755 F.3d at 1371).). There is no such requirement in the specification. As Roku argues, correctly, Respondents again are attempting improperly to read a limitation from the preferred embodiment into the claim. (CMBr. at 9.). Additionally, the Applicant did not specifically define what an “identifier-entry” is, or create a specific lexicography that would take it out of “plain and ordinary” meaning. (*Id.*). At least part of Roku’s explanation is correct. That is an “entry” clearly means an “entry into a remote.” (CMBr. at 11 (citing JXM-0001 at 6:21-22).). While Respondents may be correct that the patent specification only identifies an “identifier entry” that can include a “brand identifier” or a “code-set-identifier” or a “wild-card” code, as recited in claim 9, there is no other qualification, narrowing of, or limitation to the claim. (JXM-0001, cl. 1 at 9:35.). Here, the identifier portion of the claim term references an “identifier” as one of codes identified, or a wild-card code with no other limitation expressed.

- c. **“testing . . . by sending, via the transmitter, to a Consumer Electronic device [] one or more specific control code functions” / “testing . . . by sending, via the transmitter, to the Consumer Electronic device [] one or more specific control code functions” (claims 1, 10, 14)**

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
testing . . . by sending one or more specific control code functions to a Consumer Electronics device via the transmitter testing . . . by sending one or more specific control code functions to the Consumer	testing, performed by a user, . . . by sending, via the transmitter, to a Consumer Electronic device [] one or more specific control code functions testing, performed by a user, . . . by sending, via the transmitter, to the Consumer	testing . . . by sending one or more specific control code functions to a Consumer Electronics device via the transmitter testing . . . by sending one or more specific control code functions to the Consumer

Electronics device via the transmitter	Electronic device [] one or more specific control code functions	Electronics device via the transmitter
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As Roku points out, Respondents are attempting to add a limitation—“performed by a user”—into the claims. (CMBR. at 12.). *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments”) (citations omitted). It is improper to read a limitation from the specification into the claim, except in the case of lexicography or disavowal. *See, e.g., Thorner*, 669 F.3d 1362, 1365 (Fed. Cir. 2012); *Hill-Rom*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). These claim limitations are not defined in the specification, and there is no clear disavowal of claim scope that would limit the testing steps to those “performed by a user.” (*See* CXM-0012 (Balakrishnan Decl.) at ¶¶ 43-44.). Thus, adding the limitation is not warranted.

Moreover, there is no support in the specification for Respondents’ proposed construction. The preferred embodiment discloses the remote “sending, via the transmitter, . . . one or more specific control code functions,” without user intervention, as the remote iterates through the code sets. (JX-0001 (’875 patent) at 6:35-37 (“During the iteration, the URC sends a specific (or multiple specific) IR-functions per code-set”); *see also* CXM-0012 (Balakrishnan Decl.) at ¶ 45.). Therefore, the user does not need to be involved in this sending step. (CXM-0012 (Balakrishnan Decl.) at ¶ 45.).

Moreover, unlike claims 1, 10 and 14, several of the dependent claims specifically invoke the actions of the user. (*See* JX-0001 (’875 patent), claims 2-4 (reciting “user approval” and “user reaction”); *see also* CXM-0012 (Balakrishnan Decl.) at ¶ 45.). This indicates that when the applicants intended to require a step to be performed by a user, they said so explicitly. They did

not do so for these claims. *See Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358-59 (Fed. Cir. 2016) (“[T]he patent contains other claims . . . that specifically recite . . . a limitation not present in the asserted claims. If the patentee intended to restrict the claims-at-issue to require [such a limitation], it could have included that same limitation.”); *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1122 (Fed. Cir. 1985) (“It is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.”).

Accordingly, “testing . . . by sending, via the transmitter, to a Consumer Electronic device [] one or more specific control code functions” and “testing . . . by sending, via the transmitter, to the Consumer Electronic device [] one or more specific control code functions” are construed to mean “testing . . . by sending one or more specific control code functions to a Consumer Electronics device via the transmitter” and “testing . . . by sending one or more specific control code functions to the Consumer Electronics device via the transmitter,” respectively. Roku’s proposed construction is faithful to the claim language and does not improperly add purported requirements from selected embodiments described in the specification.

d. “means for accepting an identifier entry” (claim 14)

Roku’s Proposed Construction	Respondents’ Proposed Construction	Adopted Construction
<p>This is a means-plus-function term subject to 35 U.S.C. § 112(6).</p> <p>Function: accepting an identifier-entry</p> <p>Structure: keyboard 40 as shown in Fig. 7 and as described at 9:7-8 and 6:21-</p>	<p>This is a means-plus-function term subject to 35 U.S.C. § 112(6).</p> <p>Function: accepting an identifier-entry</p> <p>Structure: a numerical or SMS keyboard</p>	<p>This is a means-plus-function term subject to 35 U.S.C. § 112(6).</p> <p>Function: accepting an identifier-entry</p> <p>Structure: a numerical or SMS keyboard</p>

23 of the '875 patent, and equivalents thereof.		
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The Parties agree that the term “means for accepting an identifier entry” should be construed as a means-plus-function limitation under § 112, ¶ 6. (CMBr. at 13; RMBr. at 27.). *See, e.g., Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed. Cir. 2003) (“Where a claim uses the word ‘means’ to describe a limitation, we presume ‘that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses’”) (internal citations omitted). The Parties also agree that the function is “accepting an identifier entry.” (CMBr. at 13; RMBr. at 27.). The Parties only dispute the proper corresponding structure.

“A means-plus-function limitation recites a function to be performed rather than definite structure or materials for performing that function. Such a limitation must be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Lockheed Martin Corp. v. Space Systems/Loral, Inc.*, 324 F.3d 1308, 1318 (Fed. Cir. 2003) (citing 35 U.S.C. § 112, ¶ 6) (internal citation omitted). Structures for a means-plus-function term are “corresponding structure[s] **only if** the specification or prosecution history **clearly links or associates** that structure to the function recited in the claim.” *Altiris*, 318 F.3d at 1375 (internal quotations and citations omitted) (emphases added); *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1352 (Fed. Cir. 2015).

As Respondents point out, the specification of the '875 patent only links the “numerical keyboard” or “SMS keyboard” as corresponding structures for accepting an identifier entry. (RMBr. at 28 (citing JXM-0001, 4:4-6 (“a numerical keyboard for entering a brand-identifier”), 4:6-12 (“the user can write the brand-identifier by means of the numerical keyboard”), 7:8-35 (“The SMS-keyboard is a way to compose words using the numerical keypad as found on

phones”)).).

Roku’s proposed structure, “keyboard 40 as shown in Fig. 7,” is not linked anywhere in the specification to the required function. Figure 7 is merely a “block diagram of a remote control suitable for implementing the present invention.” (JXM-0001 at 5:25-26, 9:5-6.). That fails to clearly link that keyboard 40 to *any* specific function, let alone the claimed function of “accepting an identifier-entry.” See *Lufthansa Technik AG v. Astronics Advanced Elec. Sys. Corp.*, 711 F. App’x 638, 641 (Fed. Cir. 2017) (“Although the ’016 patent provides a black-box ‘control and supervision unit 60,’ that unit also performs other functions . . . the ’016 patent does not call out a specific, well-known component to perform the claimed function”); *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1216-18 (Fed. Cir. 2003) (“MIDCO would have us hold that software is also a corresponding structure for the converting function, even though the reference to software is not clearly linked to the claimed converting function.”); *Altiris*, 318 F.3d at 1375. Thus, the structure Roku proposes has no support in the specification.

In addition to the keyboard 40 shown in Figure 7, Roku relies upon column 9 at lines 7-8 in the specification that discloses “a processor 30, a keyboard 40, and IR or RF transmitter 50 for transmitting control codes and a memory 60.” (JXM-0001 at 9:7-8.). As Respondents note, while the transmitter may be linked to a function of transmitting control codes, none of the other structures (including keyboard 40) are clearly linked to any particular functions. (RMBR. at 29 (citing *Med. Instrumentation & Diagnostics Corp.*, 344 F.3d at 1216)). Similarly, column 6 at lines 21-23 upon which Roku relies merely states that “[t]he user looks up the Brand-id or the single code-set-id in the instructions for use of the remote and enters it on the URC (step 3).” (JXM-0001 at 6:21-23.). As Respondents contend, there is no clear link to the keyboard 40 that

Roku proposes.

Respondents' proposal of "a numerical or SMS keyboard" is the only corresponding structures in the specification that are clearly linked to the function "accepting an identifier-entry." Accordingly, the corresponding structure for "means for accepting an identifier entry" is "a numerical or SMS keyboard."

e. "means for scanning though remote control code-sets" (claim 14)

Roku's Proposed Construction	Respondents' Proposed Construction	Adopted Construction
This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: scanning through remote control code-sets Structure: processor 30 as shown in Fig. 7 and described at 9:7-11 of the '875 patent, implementing one of the following three disclosed algorithms (1) 2:51-60, (2) 4:54-60, or (3) 6:28-49, as also shown in Fig. 5, steps 4-11 (steps 9-10 being optional), and equivalents thereof	This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: scanning through remote control code-sets Structure: processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15	This is a means-plus-function term subject to 35 U.S.C. § 112(6). Function: scanning through remote control code-sets Structure: processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional)

The Parties agree that the term "means for scanning though remote control code-sets" is a means-plus-function term subject to § 112, ¶ 6. (CMBr. at 17; RMBr. at 30.). *See, e.g., Altiris*, 318 F.3d at 1375. The Parties also agree that the function is "scanning through remote control code-sets" and that the corresponding structure includes a processor and an algorithm. (CMBr. at 17; RMBr. at 30.). The Parties dispute: (i) whether a computer program is part of the required structure; and (ii) which line of the specification contain or describe the proper algorithm(s).

Respondents' proposed construction, which requires a computer program, is consistent with the disclosures in the specification. As Respondents note, the specification of the '875 patent does not describe a processor *alone* as capable of performing the function "scanning through remote control code-sets." (RMBr. at 30-31.). Rather, the specification discloses that a computer program is a necessary structure to perform scanning, which Roku did not dispute in its *Markman* briefing or during the *Markman* hearing (*see* CMBr. at 17-20; CSMBr. at 1-6; MHR'g Tr. at 93:9-20). (JXM-0001 at 3:60-65 ("programming of the URC will automatically go to a further scanning step"), 5:42-43 ("For Philips the software-algorithm will look up the code-sets to use by using the brand-scan process in the software."), 6:32-33 ("the software iterates through all these codesets"), 4:41-42 ("Preferably, the method according to the invention is implemented by means of a computer program.")). Although independent claims 1 and 11 state "scanning, via the processor and memory, th[r]ough remote control code-sets," the specification makes clear that it is the computer program stored on the memory that is necessary for the scanning function. (*Id.* at 9:9-11 ("The invention is preferably implemented by a suitable computer program stored in memory 60, which is run by processor 30."), 10:25-27 ("computer program code executable by a processor to perform the steps of setting up a Remote Control")).

Additionally, Respondents' proposed algorithm, as described in 6:28-67 and shown as steps 4-15 in Figure 5, is supported by the disclosures in the specification. As an initial matter, the Parties agree that the scanning algorithm begins at 6:28, as depicted in step 4 of Figure 5, and includes steps 5-11 of Figure 5. (*See, e.g.,* CMBr. at 17; RMBr. at 30.). However, Roku's proposed algorithm extends only to 6:49, thereby excluding steps 6 (JXM-0001 at 6:64), 10 (JXM-0001 at 6:50), and 11 (JXM-0001 at 6:54, 6:57, 6:66), which Roku includes in the algorithm. Thus, Roku's premature cutoff of the algorithm at 6:49 is improper.

Moreover, Roku's attempt to end the scanning algorithm at step 11 is contradicted by the specification's express teaching that "the algorithm" only stops at two possible steps: "the algorithm stops and the user approved code-set is installed (step 14)" or "the algorithm stops without installing a code-set (step 15)." (JXM-0001 at 6:51-52, 6:66-67.). This is also clearly shown below in Figure 5.

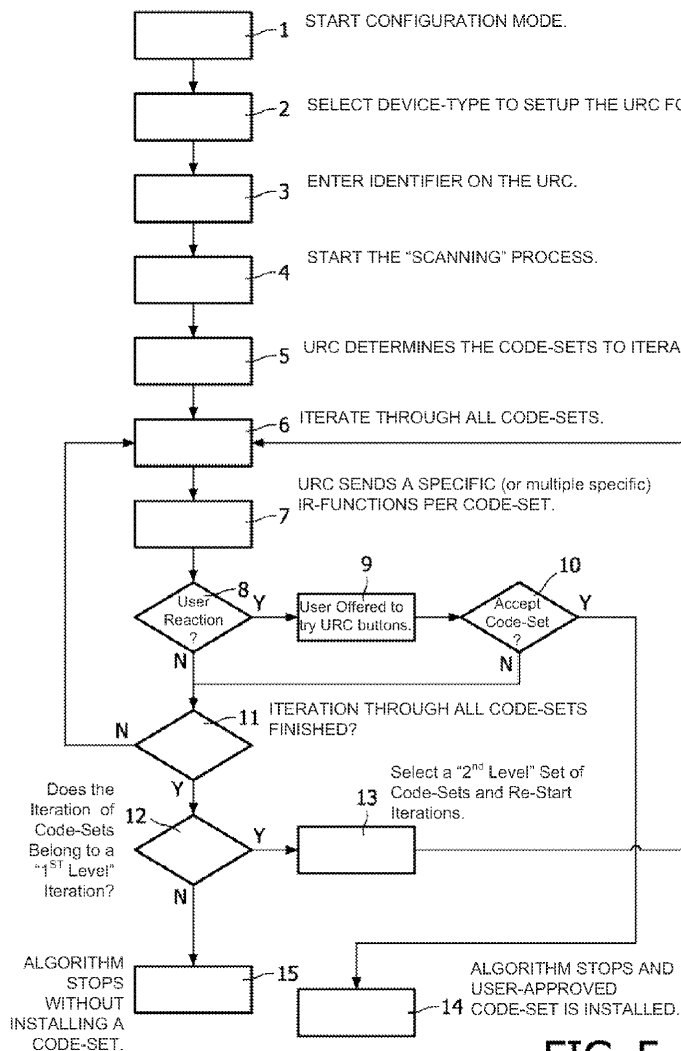


FIG. 5

(JXM-0001 at Fig. 5.).

Additionally, step 6, which Roku includes as part of the algorithm, is expressly led into by steps 12-13. (JXM-0001 at 6:55-64, Fig. 5.). This further demonstrates that Roku's exclusion

of steps 12-13 is not supported by the specification of the '875 patent.

Roku contends that steps 12-13 cover a “second scan,” which Roku argues is not required to satisfy the scanning function. (*See* CMBr. at 19-20.). Roku also asserts that because this “second scan” is expressly recited in dependent claim 6, the additional scanning step is not required by claim 14. (*Id.* at 20.). However, as Respondents point out, there is no evidence that claim 6 is referring to any steps in Figure 5 or any text in column 6 of the '875 patent. (RSMBr. at 3-4.). Figure 5 illustrates that the “scanning” algorithm starts at step 4 and steps 11-13 all feed back into step 6 as part the same scanning algorithm, without any indication of a second scan. Thus, Roku’s attempt to end the scanning algorithm at step 11 is unsupported.

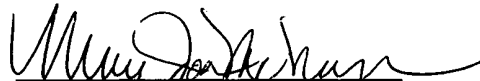
With respect to step 9, the Parties agree that step 9 is optional. (CMBr. at 19 (citing JXM-0001 at 6:46-47 (“If the user reacted, he is (optionally) offered to try the buttons of the URC for the selected code-set (step 9).”); RMBBr. at 34; RSMBBr. at 5.). Roku argues that “[b]ecause step 10 occurs after optional step 9, step 10 must also be optional.” (CMBr. at 19; *see also* MHR’g Tr. at 90-18-20.). However, as Respondents point out, the specification does not describe step 10 as optional or dependent on step 9. (RSMBBr. at 5; RMBBr. at 34 (citing JX-0001 at 6:50-51 (“In step 10 the user indicates if he accepts the current remote control code-set or not.”))).). Furthermore, step 10 is required in the scanning algorithm because the performance of step 10 is the only pathway to a successful scan that results in installing a code-set. (RMBBr. at 34-35; RSMBBr. at 5; JXM-0001 at Fig. 5 (showing that step 10 is the only pathway to step 14).). Accordingly, while claim 9 is optional, claim 10 is not.

Roku also proposes two additional algorithms at 2:51-60 and 4:54-60. (CMBr. at 17-19.). Both are incorrect. As Respondents note, the “algorithms” Roku identifies are simply restatements of the function without any explanation as to *how* the function is performed.

(RMBR. at 35-36.).

Therefore, the corresponding structure for “means for scanning though remote control code-sets” is a “processor and computer program, with the algorithm as described in 6:28-67, as also shown in Fig. 5 steps 4-15 (step 9 being optional).”

SO ORDERED.


MaryJoan McNamara
Administrative Law Judge



US008378875B2

Inv. No. 337-TA-1263

JX-0001(12) **United States Patent**
D'Hoore et al.(10) **Patent No.:** **US 8,378,875 B2**(45) **Date of Patent:** **Feb. 19, 2013**(54) **METHOD OF PROGRAMMING A
UNIVERSAL REMOTE CONTROL**(56) **References Cited**(75) Inventors: **Michael Walter Paul D'Hoore**,
Korbeek-Dijle (BE); **Juergen Forscht**,
Nanolstadt (DE); **Rogier Louis Jacques
Willem Thissen**, Leuven (BE)(73) Assignee: **Koninklijke Philips Electronics N.V.**,
Eindhoven (NL)(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 1012 days.(21) Appl. No.: **12/282,692**(22) PCT Filed: **Mar. 5, 2007**(86) PCT No.: **PCT/IB2007/050714**§ 371 (c)(1),
(2), (4) Date: **Mar. 6, 2009**(87) PCT Pub. No.: **WO2007/105142**PCT Pub. Date: **Sep. 20, 2007**(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**
H04L 17/02 (2006.01)
G05B 11/01 (2006.01)(52) **U.S. Cl.** 341/176; 348/734; 340/12.28(58) **Field of Classification Search** 341/176;
340/4.11, 12.23, 12.28; 348/114
See application file for complete search history.

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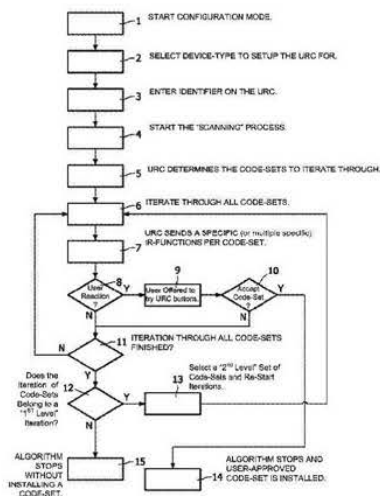
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Primary Examiner — Don N Vo

(57) **ABSTRACT**

A method for setting up a Remote Control is described. In one step (1) a configuration mode is entered. In another step an identifier entry is accepted (3). In case that the identifier is a brand-id the remote control scans through code-sets corresponding to the brand by sending a remote control signal (7), checking for a user reaction (8), testing further remote control signals of a user selected code-set (9) and checking for a user approval of the selected code-set (10) and wherein the step of scanning is repeated until a user approval is entered. Lastly the remote control installs the user approved code-set (13). In case that the identifier is a code-set-id the remote control sends a remote control signal of the corresponding code-set (7), checks for a user reaction (8), tests further remote control signals of the code-set (9) and checks for a user approval of the code-set. Moreover the invention describes a Remote Control that is capable of performing the previously described steps.

15 Claims, 5 Drawing Sheets

ROKU1263_0665164

JX-0001.0001

...	...
TV	DVD
Philips: 0392, 1253, 5547, 2236,	Sanyo: 5661
4587, 4566,	Sony: 0023, 0024, 2566, 4456
5689, 6588	
Philco: 5689, 4566	
...

FIG. 1

...
Philips	9375	Samsung	9973
Pioneer	9376	Sony	9876
...

FIG. 2

...		
TV	9375 =Philips	0392, 1253, 5547, 2236, 4587, 4566, 5689, 6588
TV	9376 =Pioneer	5697, 4566, 4567, 4588, 6994, 0122
TV	9876 =Sony	0036, 4563, 5642
...		
DVD	9375 =Philips	6545, 6653, 7564
...		
DVD	9973 =Samsung	1212, 0126, 4456, 3365
DVD	9876 =Sony	0023, 0024, 2566, 4456
...		

FIG. 3

...		...	
Philips	9375 (an actual pointer to a list of codesets)	Samsung	9973 (an actual pointer to a list of codesets)
Philco	5689 (a single codeset-id)	Sanyo	5661 (a single codeset-id)
Pioneer	9376 (an actual pointer to a list of codesets)	Sony	9876 (an actual pointer to a list of codesets)
...		...	

FIG. 4

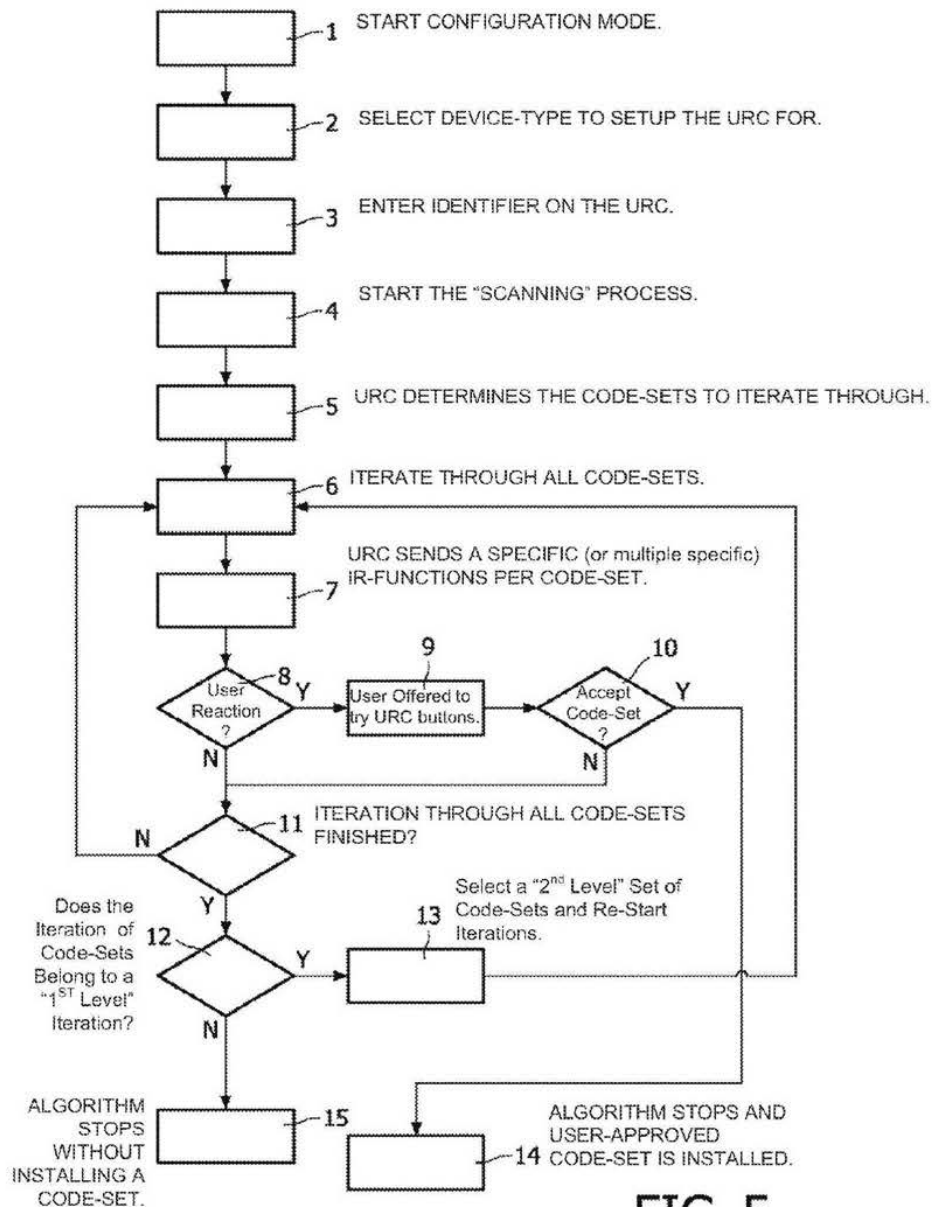


FIG. 5

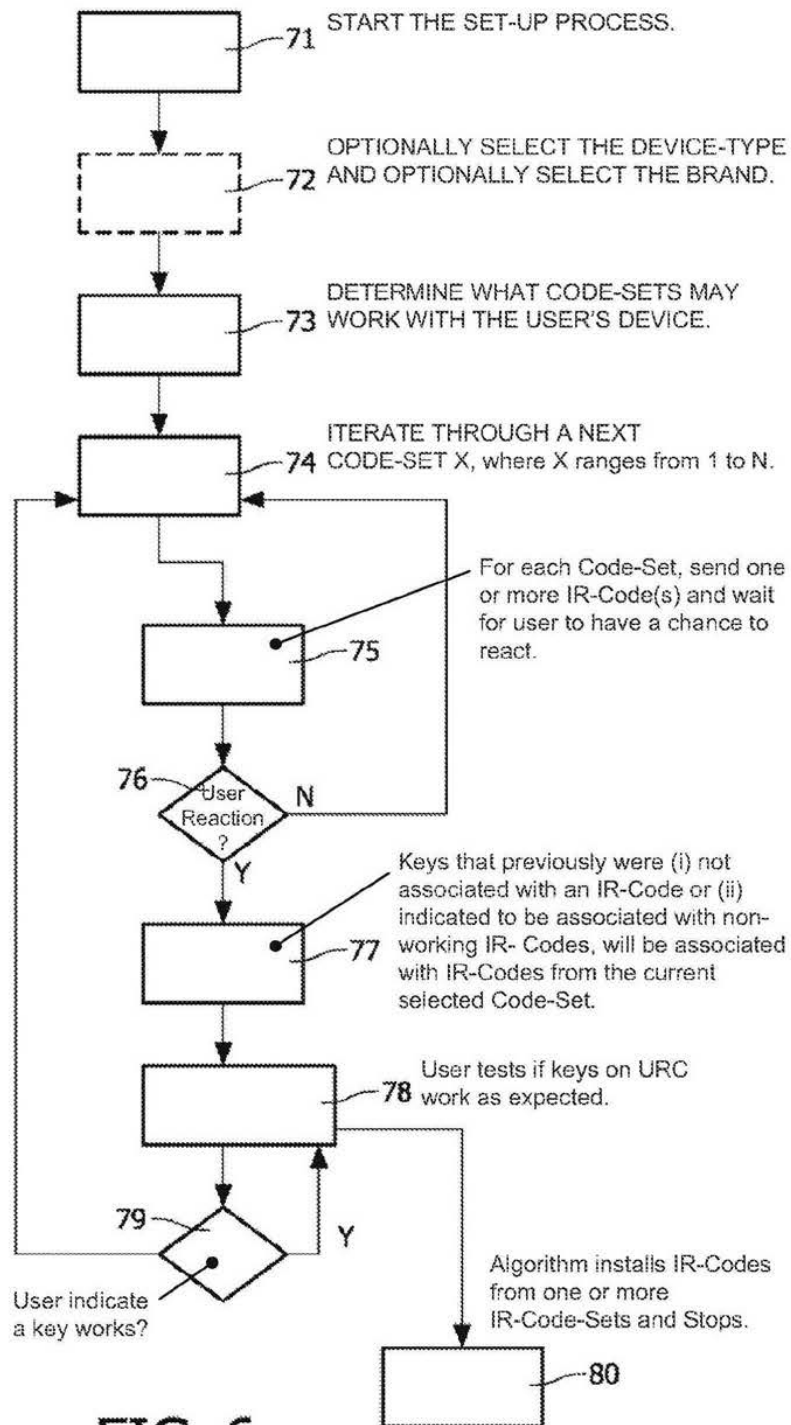
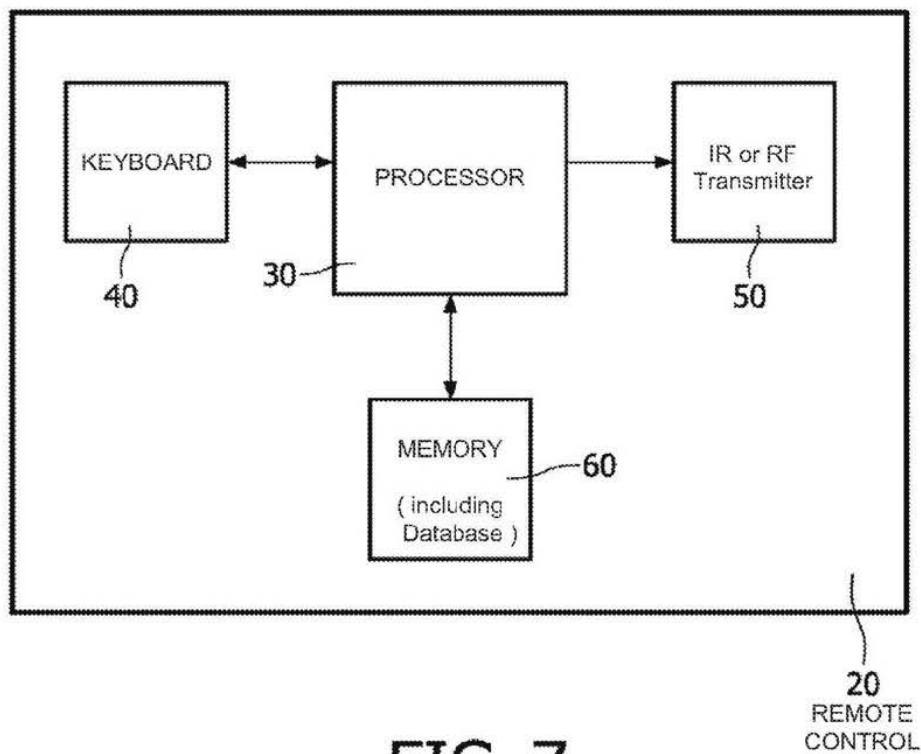


FIG. 6



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METHOD OF PROGRAMMING A UNIVERSAL REMOTE CONTROL

BACKGROUND OF THE INVENTION

1. Technical Field

The present invention generally relates to a Universal remote control (URC). Moreover the present invention relates to a method of programming an URC, e.g., by using brand- and code-set identifiers.

2. Description of Related Art

Multiple ways exist how a user can configure a Universal Remote Control (URC) or another device with URC functionality to work with his CE equipment (like TV, Amps, DVD-players, . . .). Most URCs actually offer a multitude of ways to do this. The goal of all these methods is to help the user to easily find the best-matching 'IR code-set' (set of IR codes) for the URC to control the CE equipment. Finding that best-matching code-set is not easy due to the high number of possible code-sets for a certain Brand/Device combination. E.g. for Philips TVs a user has to pick one of 10-15 code-sets.

The most popular ways of configuring that URC are listed below. All have drawbacks as described.

1. Enter a code-set from the manual (further referred to as method 1).

The user uses the manual to look up a combination of Brand and Device-type (e.g. TV, DVD, . . .). It is possible that the universal aspect of the remote is limited to just one Device-type, often TV. There he finds a list of code-set-ids he needs to punch in on his URC. Often these code-set-ids consist of 3 to 5 digits (seemingly random). Before entering the first code-set-id, the user needs to press some 'magic' combination of keys (or a special) key to go to programming mode. After having entered the first code-set-id, the user can try out the codes of the installed IR code-set to verify if that works on his CE equipment. If the user isn't happy (since some codes are not working, or he sent the wrong code), he can use the programming mechanism to enter another code-set-id and try again.

The main drawback of this scenario is that it's tedious for a user to enter the code-set-id digits and try to find a code-set that works. Many will not have any effect on the equipment at all. Also this requires a pretty extensive list, that contains all combinations of Brand/Device-types and their list of code-set-ids to be tried. This list may be in a manual or on a web site in the case that users get web support. The above is illustrated in FIG. 1 that shows part of the URC's manual that a user uses to look-up the Code-set-ids for the Brand/Device-type combinations.

2. Auto-scan (also known as auto-search, further referred to as method 2)

Auto-scan makes it simpler for a user to find a code-set that works. Here the user presses another 'magic combination of keys', optionally selects the device-type he wants to search for (i.e. By pressing the 'TV', or 'DVD' button on his URC). Then he presses a key to start auto-scan. In some variants he has to keep a certain button pressed. The URC starts iterating through all code-sets for the selected device and sends one or more IR-functions in the code-set (often Power-toggle or Power-off) to the equipment. As soon as the CE device reacts (by either turning off, on, or any other response to the IR-code sent), the user presses a button (or releases a button he was holding). Now he can try if the other keys work as well, or have a mechanism to restart auto-scan trying to find another code-set that works better.

The main drawback of this auto-scan is that it can take a long time for the URC to find a working code-set. Also

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continuing auto-scan when it finds a sub-optimal code-set, i.e. some functions/codes are missing or not working properly, is tedious.

The methods 1 and 2 are disclosed in U.S. Pat. No. 6,344, 817 B1.

3. Brand-search (further referred to as method 3).

Using Brand-search the user has to enter a brand-id (instead of a code-set-id) and choose the device-type he wants to find IR-codes for. There is a 'magic' key-press to start this procedure. Then the user types the ID of the brand of his CE equipment and presses the device-button (TV, DVD, Sat, AMP). Then an auto-scan starts, but only for the code-sets for that certain brand (not for all brands as in auto-scan).

The main advantage is that this is a lot quicker than auto-scan. The drawback is that a manual is needed to look up the brand-ids, although it is briefer than the manual needed for method 1. Another big drawback is that for all brands the URC needs to keep a reference to all the code-sets for a certain brand/device-type combination. This consumes a lot of storage space. For that reason often only the bigger brands are supported for this mechanism. If the right brand is not in this list, the user is referred to method 1 or 2. As explained herein above, in case of method 1, a bigger manual is needed. Also the user has to try multiple methods that all work different and therefore needs to read through many pages of the manual before he successfully can configure his URC. The user has to select the correct method to be used, which may be confusing.

Another disadvantage is that brands that are not in the list of supported-brands will never work. Users will have to revert to method 1. FIG. 2 shows a part of the manual that the user uses to look up the brand-ids. This table is much shorter than the table for method 1, since it only contains the brand-ids for the top brands. The Philco and Sanyo brands are not in here to save space on the URC's storage. Inside this storage there is another table that links the brand-ids per device-type to the list of code-sets that brand-search will iterate through. This is shown in FIG. 3. Brands that are introduced after the production of the remote will never be covered using brand-search. When new brands appear on the market, a software update of the URC is needed. Also in case there is a new code-set-id for a given brand/device-type combination brand search does not work. Furthermore, brand-search assumes all brand and corresponding brand-ids are fixed.

It is an object of the invention to provide a URC with an easy setup while requiring limited memory resources. Moreover it is an object of the invention to provide a setup method for a URC that is easy for a user.

SUMMARY OF THE INVENTION

According to an aspect of the invention, a method is provided for setting up a Remote Control. It comprises the steps of: entering a configuration mode, accepting an identifier-entry, and scanning through remote control code-sets. The step of scanning comprises: in case that the identifier entry is a brand-identifier, iterating through the remote control code-sets corresponding to the brand and testing said remote control code-sets, and in case that the identifier-entry is a code-set-identifier: testing the remote control code-set corresponding to the code-set-identifier.

This allows making the configuration of a URC simpler for a user. At the same time it makes producing the so created simpler URC cheaper for the manufacturer because there is no additional need for electronic storage and the instructions for use (e.g. manual) can be kept a lot smaller.

The main improvement is to combine the 'Brand-id' (as used in the Brand-search method) with the 'Code-set-id' (as

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used in the 'manual code-set-id selection' method). To the user all these ids appear to be 'Brand-ids'; some of these ids are actual Brand-ids (referring to a pre-programmed list of code-set-ids for a certain brand/device-type combination); others are actual code-set-ids. For brands/device-type combinations that have only a low number of code-sets, or the first code-set has a very high success-rate, the user will punch in the code-set-id directly. This means there is no additional memory usage for making a pointer from a brand-id to code-set-ids. In technical terms the notion of code-set-ids and brand-ids still exists, but this is made invisible to the user. There might be a numbering convention to distinguish between brand-ids and code-set-ids (e.g. all brand-ids start with 8 or 9).

The method according to the present invention has numerous advantages:

Within the same memory constraints, the Brand-search can be extended to ALL brands, not a small subset of popular brands.

It is easier for a user, since there is no fallback scenario from Brand-search to Auto-scan or manual Code-set-id selection needed, anymore.

There is no need for an extensive manual as needed for the Code-set-id selection method (method 1). It makes configuration of URC functionality easier for users.

In the method according to the invention by only changing the instructions for use, almost all brands can be supported. In case that a new brand appears, the instructions for use should reflect this new brand by means of the code-set-id of the basic IR-code-set that it uses. To the user this code-set-id appears to be the brand-id of the new brand. This assumes that this basic IR-code-set is already in the IR-Database (which is often the case).

According to an embodiment of the invention, the iteration through remote control code-sets corresponding to the brand continues until a user approval of a remote control code-set is entered or until all the remote control code-sets corresponding to the brand have been tested. In this way, the success rate of finding a working remote control code-set for the brand is made as high as possible. If the user approves of a certain remote control code-set, it is installed into the remote control.

Preferably, the step of testing a remote control code-set comprises the steps of: sending a remote control signal of the remote control code-set (preferably power toggle or power on/off), checking for a user reaction, and in case of a user reaction, enabling the user to test keys of the Remote Control for the remote control code-set. So, first a limited test of the code-set is performed sending one or a few codes. If this/these code(s) work correctly, the user reacts, for example by pressing a key of the remote control. He is then given the opportunity to test also the other codes. This way of testing is very efficient, because the user only has to perform an extensive test for the code-sets for which the first code(s) worked, correctly. For the other code-sets no full test has to be performed.

According to a further preferred embodiment of the invention, a device type entry is accepted. In this way, the scanning can be limited to code-sets for a certain device type, thereby substantially reducing the time of the scanning process.

Because there is a small possibility that the brand-search initiated by this method doesn't result in a working URC, the programming of the URC will automatically go to a further scanning step where the remotes iterates through all 'back-up' code-sets for the selected device-type, if no working code-set was found during the first scanning step.

In order to shorten the user manual by taking out the minor brands, or to allow new brand names with existing codes sets,

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a wild card (e.g. "0000") may be selected that will scan through all code sets. Preferably, the code sets of minor brands with the highest likelihood are first scanned through.

According to a further embodiment the use of a numerical keyboard for entering a brand-identifier comprising letters is enabled. This brand identifier preferably is the name of the brand. In this way, the user can write the brand-identifier by means of the numerical keyboard of the remote control in the same way as writing SMS-messages using the numerical keyboard of his mobile phone. Since most users have experience in writing SMS-messages, this results in a very comprehensible way of entering the brand identifier.

According to a further aspect of the invention another method for setting up a Remote Control is provided. It comprises the steps of: entering a configuration mode, scanning through remote control code-sets, testing if individuals keys of a code set send correct codes and receiving user-feedback on the correct and/or incorrect working of the tested keys, replacing non-working codes by codes from at least a further remote control code-set, combining codes from the remote control code-sets and storing them for use by the remote control. So, a number of remote control code-sets are combined into a single remote control code-set. The single remote control code-set is installed in the remote control. This is very practical if there are multiple code-sets that trigger a reaction on the equipment to be controlled but also comprise a few codes that do not work.

According to an embodiment codes from the same remote control code-set are assigned to keys belonging to a certain key-group. In practice it is very likely that if one key of a certain keygroup works, all keys will work if their functions are taken from the same IR-codeset. This will speed up the set-up of the remote.

According to a further embodiment based on the testing step the user-feedback is used to limit or extend the set of remote control code-sets that are scanned through. For example, if the user feeds-back that a certain button is or isn't working, this information can be used to remove codesets from the set of codesets that haven't been iterated through, yet. This will speed up the set-up of the remote.

Preferably, the method according to the invention is implemented by means of a computer program.

According to a further aspect of the invention a remote control is provided comprising memory means storing brand identifiers pointing to a list of code set-identifiers for the brand and storing single code set-identifiers which are not pointed to by a brand-identifier.

According to a still further aspect of the invention a remote control is provided comprising:

- means for entering a configuration mode,
- means for accepting an identifier-entry,
- means for scanning through remote control code-sets wherein the means for scanning are adapted for:
 - in case that the identifier entry is a brand-identifier, iterating through the remote control code-sets corresponding to the brand and testing said remote control code-sets,
 - in case that the identifier-entry is a code-set-identifier: testing the remote control code-set corresponding to the code-set-identifier.

According to a still further a further aspect of the invention a remote control is provided comprising

- means for entering a configuration mode;
- means for scanning through remote control code-sets,
- means for testing if individuals keys of a code set send correct codes and receiving user-feedback on the correct and/or incorrect working of the tested keys,

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means for replacing non-working codes by codes from at least a further remote control code-set,
means for combining codes from the remote control code-sets and storing them for use by the remote control.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and its numerous objects and advantages will become more apparent to those skilled in the art by reference to the following drawing, in conjunction with the accompanying specification, in which:

FIG. 1 shows entries for a code-set from a user manual according to the prior art.

FIG. 2 shows a part of a manual that the user uses to look up the brand-ids according to the prior art.

FIG. 3 shows a table that links brand-ids per device-type to a list of code-sets that a brand-search will iterate through according to the prior art.

FIG. 4 shows an example of a table with actual pointer to a list of code-sets.

FIG. 5 shows steps to configure a URC using a preferred method.

FIG. 6 shows steps to configure a URC using a further preferred method.

FIG. 7 shows a block diagram of a remote control suitable for implementing the present invention.

Throughout the figures like reference numerals refer to like elements.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

The table of FIG. 4 shows an example of a table with actual pointers to a list of code-sets. Ids starting with a 9, the brand-ids, (Philips, Pioneer, Samsung, Sony) are actually a pointer to a list of code-set-ids for a certain brand/device-type combination. All other ids (Philco, Sanyo) are actually single code-set-ids. The digit convention is just to illustrate the invention. For the user there is no difference between the brand-ids and the single code-set-ids, the URC's software handles the two different kinds of ids.

For Philips the software-algorithm will look up the code-sets to use by using the brand-scan process in the software. For Philco it will only use Code-set-id 5689. Another Philco code-set-id (4566) will not be used since it is very unlikely to be the correct code-set anyway.

Another advantage of this approach is that because the actual code-set-ids can be entered in the setup, it is possible for the user to type in the correct code-set in one go. This allows the support of brands that were not in the brand-list at the time the remote was produced, but use a code-set that is already available in the Database. In that case the instructions for use should be amended accordingly or the helpdesk could instruct the user which ID to enter. In case that a new brand appears, the instructions for use should reflect this new brand by means of the code-set-id of the basic IR-code-set that it uses. To the user this code-set-id appears to be the brand-id of the new brand. This assumes that this basic IR-code-set is already in the IR-Database (which is often the case).

The instructions for use may be in the form of a paper manual or in electronic form for example on a user support web site.

This approach works best if the remote control is universal for only one device-type (i.e. TV), which is the majority. In other cases a different brand-list should be present in the instructions for use for each device-type. Alternatively, a single list could be used for all device types.

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Steps to Configure a URC Using a Preferred Method of the Invention.

The User Interaction can resemble a typical Brand-search approach. The steps are shown in FIG. 5 and may actually be in a different order in different embodiments. The different steps are described below.

The user starts the configuration mode of the URC (step 1). There may be different mechanisms to do this, such as pressing a setup-key for a longer time, or by means of a 'magic' key-press where different buttons are pressed simultaneously.

If the remote is universal for more than one Device-type, the user selects the Device-type he wants to setup the URC for (step 2). This could be TV, VCR, DVD, Sat, Amp, . . . as supported by the URC. This step is optional.

Alternatively, the device type is not selected and the scanning process described herein after includes code sets for all device types for which the URC is suitable. Note that this selection may be combined in step 1 if the magic key-press contains the button for the device-type to be configured.

The user looks up the Brand-id or the single code-set-id in the instructions for use of the remote and enters it on the URC (step 3). As explained herein above, to the user all these ids appear to be 'Brand-ids'. Optionally a LED may be used to confirm the successful or unsuccessful acceptance of the entered digits. Optionally there is an id to press if the Brand is unknown or not in the list (e.g. 0000, a so called "wild card").

The user starts the 'scanning' process (step 4). They may be implemented by pressing a button on the URC or by pressing & holding a button.

The URC determines the code-sets to iterate through (step 5). If the entered ID was a pointer to a set of code-sets, the software iterates through all these codesets (step 6). If the ID was a specific Code-set-id only, the list will only contain that single Code-set and proceed (step 6). During the iteration, the URC sends a specific (or multiple specific) IR-functions per code-set (step 7). In step 8 it is checked if there is a user reaction. If there is no user reaction, the algorithm waits a certain time. Then it is checked if the iteration through the code-sets is finished (step 11). If this is not the case the iteration is continued (step 6). The next code-set is retrieved and a specific (or multiple specific) IR-functions is/are sent. When there is a user reaction (by pressing a key or by releasing the pressed key) or when the last IR-code is sent, the iteration stops.

If the user reacted, he is (optionally) offered to try the buttons of the URC for the selected code-set (step 9). Steps 7, 8 and 9 together form the step of testing said remote control code-sets.

In step 10 the user indicates if he accepts the current remote control code-set or not. If the user accepts, then the algorithm stops and the user approved code-set is installed (step 14). If the user doesn't accept, the scanning process is continued by going to step 11.

In step 12 the algorithm checks if the iteration, that was finished in step 11, was an iteration of code sets belonging to a brand ("first level" iteration). If so, the algorithm proceeds to step 13. This means that no code-set was found by iterating through the available code-sets. In step 13 a "second-level" set of code sets is selected and the iteration is re-started. This 'second-level' set could for instance consist of a list containing 1) all Brands for the device-type and/or 2) a list of back-up code-sets known to be likely candidates. Then the algorithm continues with this new list to iterate through at step 6.

If in step 12 the algorithm determines that the iteration, that was finished in step 11, was a second-level iteration, the algorithm stops without installing a code-set (step 15).

Alternative Embodiments

In a different embodiment, the invention may be used to set-up the URC-functionally of a set-top box, PVR, This may happen when the set-top-box controls other devices like a Satellite or cable receiver.

Instead of IR-codes, the idea can also be applied to RF codes.

SMS-Keyboard Entry of the Brand

In the description above, the Brand-id is represented as an x-digit code (x=4 in the examples). This always requires lookup in the manual. To make it even easier the SMS-keyboard can be used instead. On a GSM phone the '2' key also has the letters 'ABC' assigned, '3' has 'DEF'. The SMS-keyboard is a way to compose words using the numerical keypad as found on phones. Because on remotes the same 'keyboard' is used (so these letters are also printed on the digit keys), it is possible to perform similar composing.

Assuming the 'single-tap' SMS keyboard, one can spell 'PHILIPS' as: '7445477' (so each digit once), Sony becomes '7669', etc. Alternatively, the use of 'multi-tap' is possible: PHILIPS becomes '7 44 444 555 444 7 7777'. (3 taps of the 7 key generate the 3-rd letter R (the 7 key also refers to PQRS). LED-lights may be used to communicate a user that the entry of a brand was successful or not. Whether to use

single-tap, multi-tap or any other variation is not relevant for the present invention. Any number of digits is allowed, but it's possible to cap the maximum number of digits. In case of overlap (two different brands result in the same digit-sequence), a resolution can be to concatenate the list of Code-sets for both brands and iterate through these all in the scan process.

The SMS-keyboard entry of the brand may be used with the method as described with reference to FIG. 5 but also with the prior art method Brand-search (method 3).

Combine IR Codes from Different Code-Sets During the Scan Process.

Often, the scanning process will find multiple code-sets that trigger a reaction on the CE equipment. This is because there can be overlap between multiple code-sets. I.e. for code-set X the Power, digits and Teletext works ok, but volume does not, while for code-set Y the Power, digits and volume work but Teletext does not. In this case it's very practical when a user can indicate for a given matching code-set which codes do work and/or which codes do not. The URC can track this and combine the working codes of multiple code-sets into a new 'custom configuration' code set, which contains functions from multiple code-sets.

The scanning process is depicted in the flowchart shown in FIG. 6:

1. Start the set-up process, e.g. by pressing the right (magic) key (-combination). At this time none of the keys will have associated IR-codes (step 71).

2. Optionally select the device-type and optionally select the brand (step 72). This can be done in either order and may in practice be combined with step 71.

3. The algorithm determines what Code-sets may work for the user's device. Suppose there are N different Code-sets selected. These set of code-sets will be iterated through, starting with the first (step 73).

When the users indicates so (by pressing (and holding) a key) continue to next step.

4. The algorithm iterates through the next Code-set (step 74): Codeset x where x ranges from 1 to N.

5. For each Code-set in the iteration, the algorithm sends one or more IR-code(s) and wait some time to give the user the chance to react (step 75).

What IR-codes are actually sent-out depend on the progress in the algorithm. It may be a preconfigured IR-code or an IR-code for which the user indicated that it didn't work (see step 78).

6. The algorithm checks for a user reaction (indicating a sent IR-code triggers some function on the target device). This reaction is often the press (or release) of a key (step 76).

When the user doesn't react, the algorithm continues at step 74. When the user does react, the algorithm continues at step 77.

7. Assume that code-set i is selected. Keys that previously weren't associated with an IR-code or were indicated to be associated with non-working IR-codes, will be associated with IR-codes from code-set i (Step 77).

8. The user can now try pressing the keys on the URC to test if they work as expected (step 78). He has means to indicate whether the keys function correctly or not.

In different embodiments the way to indicate that differs. In a preferred embodiment the algorithm assumes all keys work OK unless the user keeps the key pressed. In other embodiments the user can, after pressing a key, press a thumbs-up or thumbs-down key to indicate if the previous key sent the correct command. Or alternatively, each key has a green and red backlight. Red means that the key doesn't work, green means that it does. Many alternatives can be conceived of.

If the user is happy with the result, he can choose to end the algorithm and store the current code-sets. (step 80).

9. The algorithm determines if the user indicated if a key doesn't work (step 79). If the user indeed indicates a key doesn't work continue at step 74 (now taking into account the user's feedback for working and non-working keys), otherwise return to step 78.

10. When the user is satisfied with all keys after step 77, the algorithm stops (step 80). It installs IR-codes from one or more IR-codesets.

Optionally, the user can indicate that he's still not happy with the current results and wants to start from scratch. In that case the user can jump to step 73 after indicating this.

In an alternative embodiment of this algorithm, key-groups are taken into account. This means that all keys that logically belong together will always be using IR-codes from the same IR-codeset. For example, the volume keygroup consists of 'volume up', 'volume down' and 'mute'. The teletext keygroup consists of all keys controlling teletext modes, the digits keygroup consists of all digits. In practice it is very likely that if one key of a certain keygroup works, all keys will work if their functions are taken from the same IR-codeset. This will speed up the set-up of the remote.

According to an alternative embodiment, the algorithm may abandon the concept of the keygroups in the following situation: if the first key of a keygroup works but the second (or subsequent) key of the key group does not work. In that case, the algorithm treats all keys in the keygroup, individually which means that the keys from the keygroup may use codes from different IR-code sets.

It is also possible to use the given feedback in steps 77 and 78 to limit or extend current set of remote control codesets while the algorithm is running. For example, when in step 78 the user feeds-back that a certain button is or isn't working, this information can be used to remove codesets from the set of codesets that haven't been iterated through yet. So if the user would indicate that the 'volume up' IR-code isn't working the remote-control can omit trying another codeset with that same IR-code for the volume up function. Also when the user would indicate that the 'program down' function would be correct this information can be used.

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The combination of IR codes from different code-sets may be used with the method as described with reference to FIG. 5 but also with the prior art methods "Autoscan" (method 2) and Brand-search (method 3).

FIG. 7 shows a block diagram of a remote control 20 suitable for implementing the present invention. Only the relevant components are shown. The remote control 20 comprises a processor 30, a keyboard 40, an IR or RF transmitter 50 for transmitting control codes and a memory 60. The invention is preferably implemented by a suitable computer program stored in memory 60, which is run by processor 30. The brand-identifiers and code-set identifiers are also stored in the memory 60.

As will be recognized by those skilled in the art, the innovative concepts described in the present application can be modified and varied over a wide range of applications. Accordingly, the scope of patented subject matter should not be limited to any of the specific exemplary teachings discussed, but is instead defined by the following claims. Any reference signs in the claims shall not be construed as limiting the scope.

The invention claimed is:

1. A method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter, the method comprising the steps of:

entering, via the keyboard and processor, a configuration mode;

accepting, via the keyboard and processor, an identifier-entry; and

scanning, via the processor and memory, though remote control code-sets in a database stored in the memory of the Remote Control, wherein the step of scanning comprises:

in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating, via the processor and memory, through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending, via the transmitter, to a Consumer Electronic device for a given iteration, one or more specific control code functions of a corresponding remote control code-set, and

in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending, via the transmitter, to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set.

2. The method according to claim 1, wherein the iteration through remote control code-sets corresponding to the brand continues (i) until a user approval of a remote control code-set is entered, via the keyboard, or (ii) until all the remote control code-sets corresponding to the brand have been tested.

3. The method according to claim 1, further comprising the step of checking, via the processor, memory, and keyboard, for user approval of a remote control code-set and installing, via the processor and memory, the user approved remote control code-set for use by the Remote Control.

4. The method according to claim 1, wherein the step of testing a remote control code-set comprises the following steps:

sending, via the transmitter, a remote control signal of the remote control code-set;

checking, via the processor, memory, and keyboard, for a user reaction; and

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in case of a user reaction, enabling, via the processor, memory, and transmitter, to test keys of the Remote Control for the remote control code-set.

5. The method according to claim 1, further comprising the step of accepting, via the keyboard and processor, a device type entry.

6. The method according to claim 1, wherein if no user approval of a remote control code set has been entered, via the keyboard, during the step of scanning, a further scanning step is performed, scanning through further remote control code-sets.

7. The method according to claim 1, further comprising enabling, via the processor and memory, the use of a numerical keyboard for entering a brand-identifier comprising letters.

8. The method according to claim 1, wherein a numbering convention is used to distinguish between brand-identifiers and code-set-identifiers.

9. The method according to claim 1, wherein the identifier-entry is a "wild card" code, and upon detecting, via the processor and keyboard, that the "wild card" code is entered, scanning further comprises iterating through all code sets for at least a device type.

10. A non-transitory computer-readable medium embodied with a computer program that comprises computer program code executable by a processor to perform the steps of setting up a Remote Control of claim 1.

11. A method for setting up a Remote Control that includes a keyboard, a processor, a memory, and a transmitter, the method comprising the steps of:

entering, via the keyboard and processor, a configuration mode;

scanning, via the processor and memory, though remote control code-sets in a database stored in the memory of the Remote Control;

testing, via the keyboard, if individuals keys of a code set send, via the transmitter, correct codes and receiving, via the keyboard, user-feedback on the correct and/or incorrect working of the tested keys;

replacing, via the processor and memory, non-working codes with codes from at least a further remote control code-set; and

combining, via the processor and memory, correct working codes from the scanned remote control code-sets into a new custom configuration code set and installing, via the processor and memory, the combined correct working codes of the new custom configuration code set for use by the remote control.

12. The method according to claim 11, where codes from the same remote control code-set are assigned to keys belonging to a certain key-group.

13. The method according to claim 11, where based on the testing step, the user-feedback is used to limit or extend a number of remote control code-sets that are scanned through.

14. Remote Control comprising:

means for entering a configuration mode;

means for accepting an identifier-entry; and

means for scanning though remote control code-sets in a database stored in a memory of the Remote Control wherein the means for scanning are adapted for:

in case that the identifier-entry is a brand-identifier that identifies a brand, (i) iterating through the remote control code-sets corresponding to the brand and (ii) testing said remote control code-sets by sending to a Consumer Electronic device for a given iteration, one of more specific control code functions of a corresponding remote control code-set; and

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in case that the identifier-entry is a code-set-identifier that identifies a single remote control code-set which is not pointed to by a brand-identifier, testing the single remote control code-set corresponding to the code-set-identifier by sending to the Consumer Electronic device one or more specific control code functions of the corresponding single remote control code-set. 5

15. Remote Control comprising:

means for entering a configuration mode;

means for scanning through remote control code-sets in a database stored in the memory of the Remote Control; 10

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means for testing if individuals keys of a code set send correct codes and receiving user-feedback on the correct and/or incorrect working of the tested keys;

means for replacing non-working codes with codes from at least a further remote control code-set; and

means for combining correct working codes from the scanned remote control code-sets into a new custom configuration code set and for installing the combined correct working codes of the new custom configuration code set for use by the remote control.

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JX-0002

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Amand

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(45) **Date of Patent:** **Jun. 17, 2008**

(54) **SYSTEM FOR REMOTE CONTROL OF IDENTICAL DEVICES**

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(73) Assignee: **Koninklijke Philips Electronics N.V.**, Eindhoven (NL)

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(58) **Field of Classification Search** 340/825.69,
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359/146, 148

See application file for complete search history.

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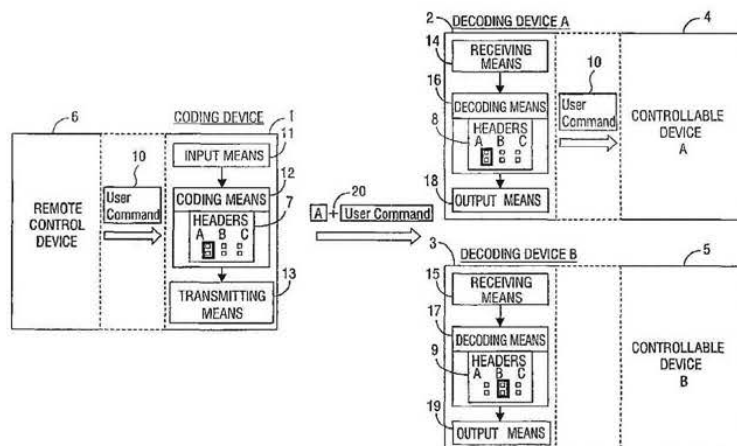
Primary Examiner—Brian Zimmerman

Assistant Examiner—Nam Nguyen

(57) **ABSTRACT**

The invention relates to a system for remote control of at least two controllable devices, the system comprising a remote control device (6) with communicating means for communicating to the controllable devices a user-specified command produced by the remote control device. The invention also relates to a method of remote control of at least two controllable devices, the method comprising the step of communicating a user-specified command to the controllable devices (4, 5). The method comprises the further steps of adding the user-specified command a device identifier for identification of at least one of the controllable devices; transmitting the device identifier and the user-specified command, receiving the device identifier and the user-specified command; extracting the device identifier, comparing said extracted device identifier with a further device identifier for identification of the controllable device, refraining from further operation with the received user-specified command if said identifiers do not match, and supplying the user-specified command to the controllable device.

6 Claims, 3 Drawing Sheets



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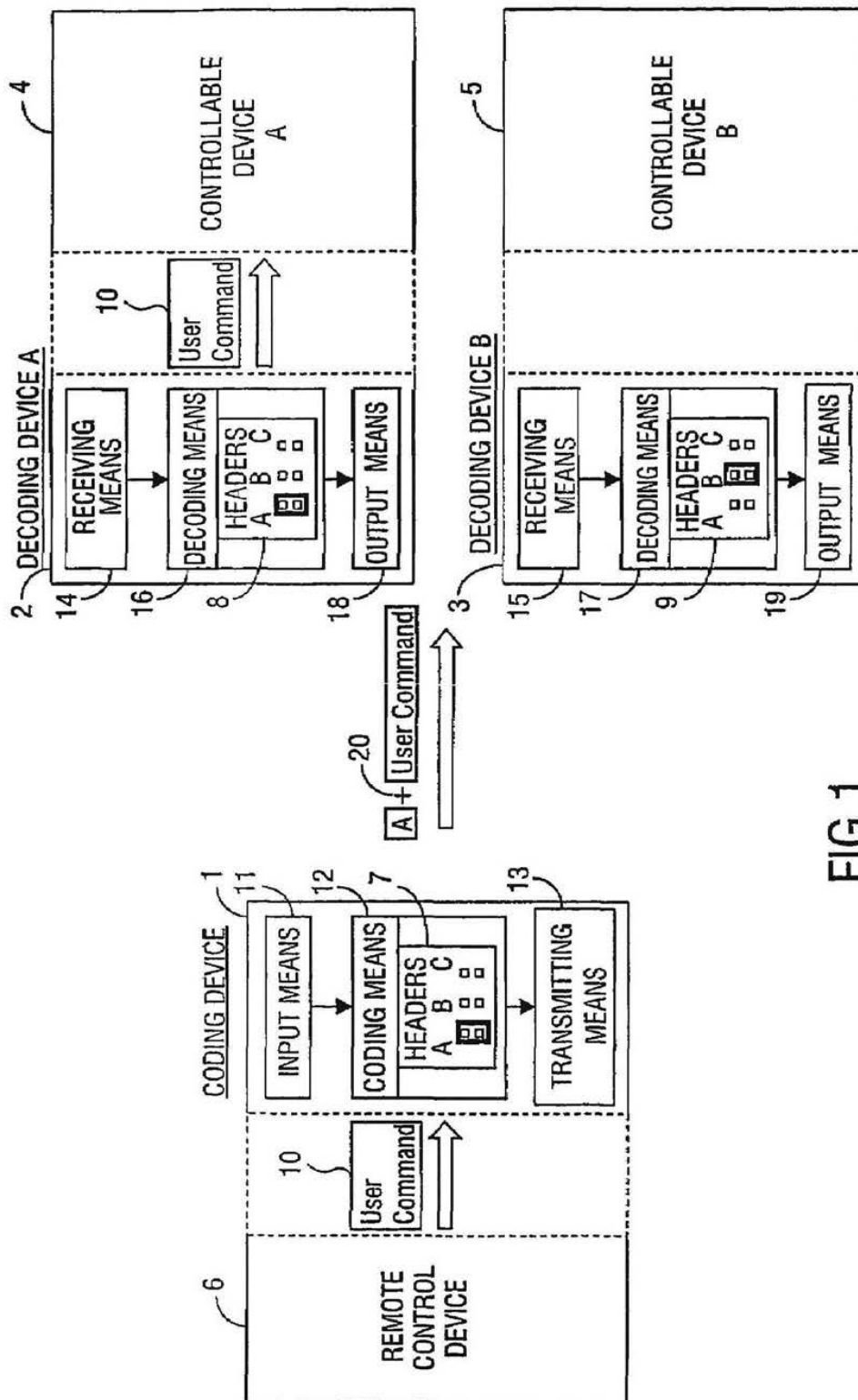


FIG.1

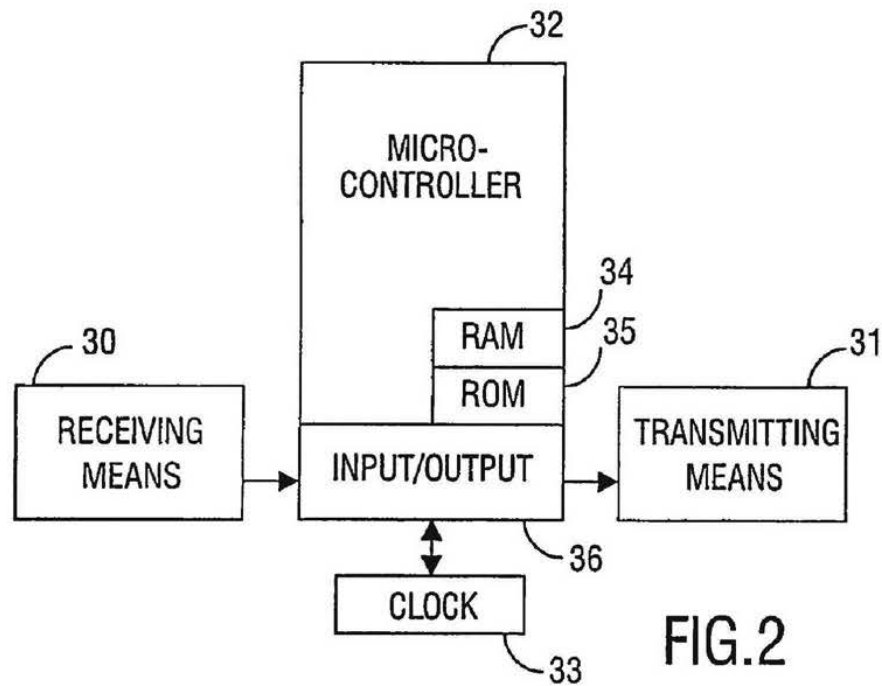


FIG. 2

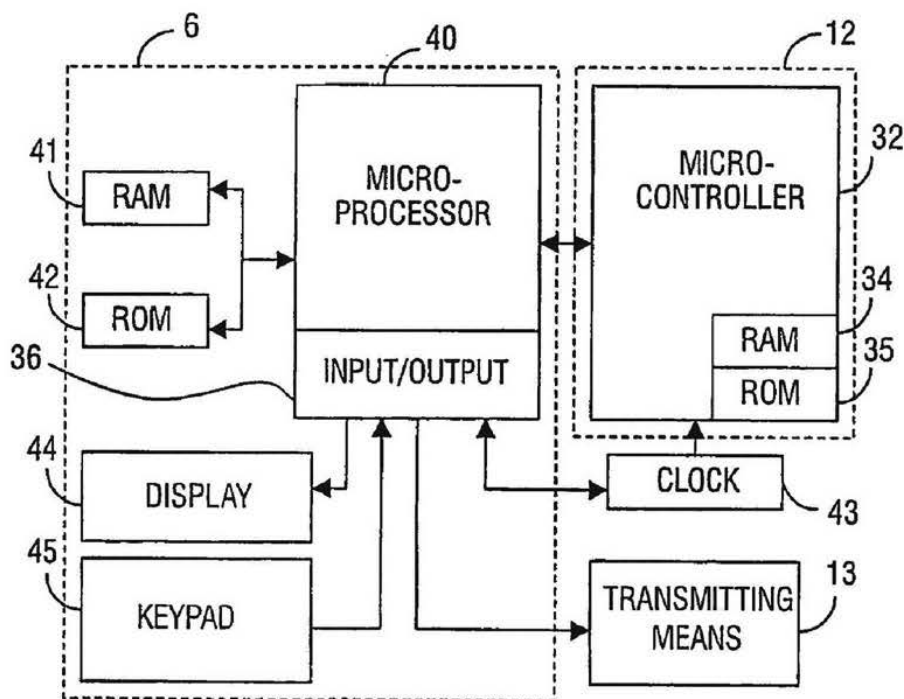


FIG. 3

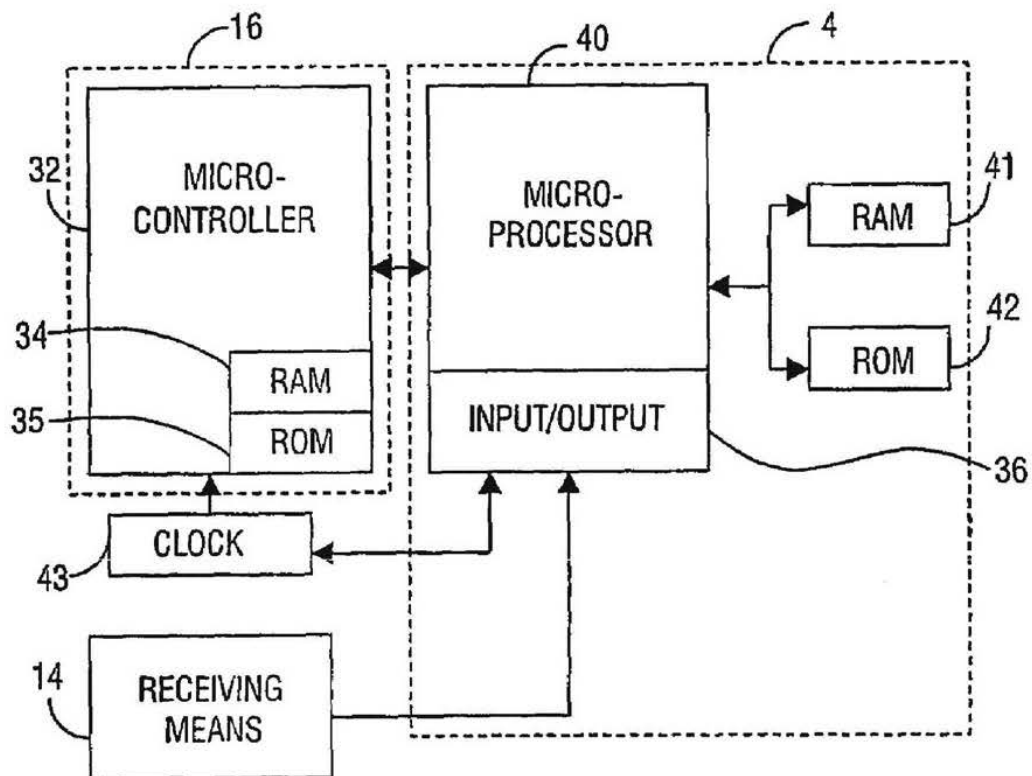


FIG. 4

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SYSTEM FOR REMOTE CONTROL OF IDENTICAL DEVICES

The invention relates to a system for remote control of at least two controllable devices, the system comprising a remote control device with communicating means for communicating to the controllable devices a user-specified command produced by the remote control device.

The invention also relates to a method of remote control of at least two controllable devices, the method comprising the step of communicating a user-specified command to the controllable devices.

An embodiment of such a system is known from U.S. Pat. No. 5,748,263.

Well known remote control systems include consumer electronics products, such as a television set (TV), video-cassette recorder (VCR), which are remote-controllable devices and can receive user commands produced by means of a remote control device. Sometimes, such remote control systems involve two or more controllable devices, which may be identical. When the controllable devices are situated fairly close to each other, a signal of the remote control device may reach not only the targeted-controllable device, but also another controllable device. Both devices will receive the signal and respond to it. This situation may occur in the showrooms of shops, exhibition pavilions, studios with professional electronics equipment, home theaters and other places with controllable devices, like TVs, VCRs, digital versatile disk (DVD) recorders, etc.

It is known to communicate to a group of apparatuses by assigning unique addresses to the apparatuses and indicating these addresses at the apparatuses themselves. Consequently, these apparatuses are unique and not identical. It is also already known from U.S. Pat. No. 5,774,673 to communicate between apparatuses with the help of using applications stored in these apparatuses. Thus, current remote control systems with a one-directional communication do not allow control of the identical remote-controllable devices without using special software, introducing any differences or hardware changes into the identical apparatuses or storing the unique pre-assigned addresses in said identical devices.

For many consumer electronics products, an infrared light is commonly used as a carrier for wireless communication. Thus, it is also necessary to develop a remote control system that can be adapted to operate with the infrared devices.

It is an object of the invention to provide a system for remote control of at least two controllable devices of the kind defined in the opening paragraph, which will be able to identify identical controllable devices and control them independently of each other.

The object of the invention is realized in that:

the remote control device is equipped with a coding device comprising an input means for obtaining the user-specified command from the remote control device; a coding means designed to add to the user-specified command a device identifier for identification of at least one of the controllable devices; a transmitting means adapted to transmit the device identifier and the user-specified command;

the controllable device is equipped with a decoding device comprising a receiving means adapted to receive the device identifier and the user-specified command; a decoding means designed to extract the device identifier; to compare said extracted device identifier with a further device identifier for identification of the controllable device; to refrain from further operation with

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the received user-specified command if said identifiers do not match; an output means for supplying the user-specified command to the controllable device.

In this way, the system of the invention comprises the coding device and the decoding device and allows control of identical devices. It is assumed that the controllable devices could be conventional controllable devices and are not necessarily identical.

There are many possibilities for implementation of the system of the present invention. The coding and decoding devices could be designed as devices which are not dependent on the implementation of the remote control device and controllable devices. Thus, the coding device includes receiving means for obtaining the command from the remote control device and could be manufactured as a separate device. Similarly, the decoding device includes transmitting means and may be separate from the controllable device. It is also supposed that the receiving and transmitting means of the coding and decoding devices are suitable to communicate with the receiving and transmitting means of the remote control device and controllable devices.

Another possibility for implementation of the system of the present invention may be to design the coding device and the decoding devices in combination with the remote control device and the controllable devices, respectively. For example, the communicating means of the remote control device may be combined with the transmitting means of the coding device, and the communicating means of the controllable device may be combined with the receiving means of the decoding device.

The object of the invention is also realized in that the method of the invention comprises the further steps of:

adding to the user-specified command a device identifier for identification of at least one of the controllable devices;

transmitting the device identifier and the user-specified command;

receiving the device identifier and the user-specified command;

extracting the device identifier; comparing said extracted device identifier with a further device identifier for identification of the controllable device; refraining from further operation with the received user-specified command if said identifiers do not match;

supplying the user-specified command to the controllable device.

The method of the invention describes steps of operation of the system for remote control of at least two controllable devices.

These and other aspects of the invention will be further elucidated with reference to the accompanying drawings, wherein:

FIG. 1 shows an embodiment of the system and method of the present invention, block diagrams of the coding and decoding devices and a general principle of operation of said system;

FIG. 2 shows an embodiment of the system of the present invention, in which a schematic diagram of the processor that could be embedded in the coding or decoding device is shown;

FIG. 3 shows an embodiment of the system of the present invention, in which a schematic diagram of the remote control device and coding device with combined transmitting means is shown;

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FIG. 4 shows an embodiment of the system of the present invention, in which a schematic diagram of the controllable device and decoding device with combined receiving means is shown.

Referring now to the drawings, FIG. 1 shows an embodiment of the system and method of the present invention. The Figure shows the block diagram of the coding device 1 and the block diagram of the decoding devices 2 and 3 associated with the controllable devices 4 and 5, respectively. The method of the invention and the general operation principle of the system are also disclosed with reference to the FIG. 1.

The remote control device 6 may have a number of keys, which generally include numerical keys, function keys and means 7 for selecting a device identifier associated with the controlled device, like the controllable device 4 or 5. An extra switch on the remote control device or coding device could implement said means for selection of the device identifiers. The decoding devices 2,3 may include means 8,9 for setting further device identifiers associated with the controlled devices 4, 5.

In FIG. 1, a selection between the device identifiers A, B and C is used as an example with the aim to explain the present invention. The device identifiers could be selected independently in the coding and decoding devices. Thus, it is shown in FIG. 1 that the further device identifier A is selected in the coding device 1 and the further device identifier B is set in the decoding device 3.

The remote control device 6 produces the user-specified command 10. The coding device 1 comprises input means 11, coding means 12 and transmitting means 13. Thus, the coding device 1 may obtain the user-specified command 10 using the input means 11. Then, the coding means add to the user-specified command the selected device identifier, which can be assigned to the specific controllable device or a group of the controllable devices. The transmitting means 13 of the coding device 1 further transmit a signal 20 incorporating the user-specified command and the device identifier to be received by the decoding devices.

The decoding devices 2, 3 comprise receiving means 14, 15, decoding means 16, 17 and output means 18, 19. The user-specified command and the device identifier 20 are being received by the receiving means 14, 15 of the decoding devices 2, 3. Then the decoding means 16, 17 extract the received device identifier and compare it with the further device identifier, which identifies the associated controllable device. The decoding means refrain from further operation with the received user-specified command if said identifiers do not match. If the received device identifier and the further device identifier, which identifies the associated controllable device, do match, the output means of the decoding device further supply the received user-specified command to the associated controllable device.

As is shown in FIG. 1, the further device identifier A is set in the decoding device 2 and the further device identifier B is set in the decoding device 3. The coding device 1 transmits the user-specified command with the device identifier A. In this connection, only the controllable device 4 will receive the user-specified command 10 produced by the remote control device 6, because the further device identifier A is set in decoding device 2 but not in the decoding device 3.

FIG. 2 shows an embodiment of the system of the present invention with a schematic diagram of the processor that could be embedded in the coding or decoding device.

The coding and decoding devices can be implemented separately from the remote control device and controllable

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devices. In this case, the coding device may include receiving means for obtaining the user-specified command from the remote control device, and the decoding device may include transmitting means for supplying the user-specified command to the controllable device. However, there is a requirement that said receiving means of the coding device can communicate with the transmitting means of the remote control device and said transmitting means of the decoding device can communicate with the receiving means of the controllable device.

In this way, the coding or decoding devices can be realized as is shown in FIG. 2. The embodiment comprises receiving means 30, transmitting means 31, a microcontroller 32 and a clock 33. The microcontroller 32 has an embedded random access memory 34 and an embedded read-only memory 35, which is used for program storage. The microcontroller 32 could implement the coding means of the coding device or the decoding means of the decoding device. Depending on the first or second implementation, the coding means of the coding device or the decoding means of the decoding device can be realized. When the coding means is realized, an input/output function 36, the receiving means 30 and the transmitting means 31 are adapted to receive the user-specified command from the remote control device and to transmit the user-specified command and selected device identifier. When the decoding means is realized, the input/output function 36, the receiving means 30 and the transmitting means 31 are adapted to receive the user-specified command and the device identifier from the coding device and to transmit the user-specified command to the controllable device. Additionally, the microcontroller 32 can be equipped with the display, the keypad and other communication means. The blocks in FIG. 2 are well known in the prior art and are not further discussed herein.

FIG. 3 shows an embodiment of the system of the present invention, in which a schematic diagram of the remote control device and coding device with a combined transmitting means is shown. FIG. 4 shows a schematic diagram of the controllable device and decoding device with a combined receiving means.

FIG. 3 shows the coding device comprising the coding means 12, the transmitting means 13 and a clock 43. The microcontroller 32 has the embedded random access memory 34 and the embedded read-only memory 35, which is used for program storage. The remote control device 6 can be realized with a microprocessor 40, a random access memory 41, a read-only memory 42, the clock 43, a display 44, a keypad 45 and the transmitting means 13. The remote control device and the coding device could advantageously share the transmitting means 13 and the clock 43. Both the microprocessor 40 and microcontroller 32 can read the clock 43. The transmitting means 13 is used for transmitting the user-specified command and the device identifier.

The embodiment depicted in FIG. 4 comprises the controllable device and the decoding device with the combined receiving means 14. Said decoding device comprises the decoding means 16, the receiving means 14 and the clock 43. The microcontroller 32 has the embedded random access memory 34 and the embedded read-only memory 35, which is E for program storage. The controllable device 4 may comprise the microprocessor 40, the random access memory 41, the read-only memory 42, the clock 43 and the receiving means 14. The controllable device and the decoding device could advantageously share the receiving means 14 and the clock 43. Both the microprocessor 40 and microcontroller 32 can read the clock 43. The receiving means 14 is used for receiving the user-specified command and the device identifier.

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tifier. Further details of the internal design of the embodiments shown in FIGS. 3, 4 will be apparent to people skilled in the art.

An alternative to having the microcontroller 32, which can implement the coding or decoding means, is to build the coding and decoding functions directly into the program stored in the read-only memory 42. This would eliminate the need for the microcontroller 32. Of course, other hardware to perform the coding or decoding functions may also be used.

The described system of the present invention allows cost-effective implementations with the additional advantages of using the infrared communication. The remote control device may be the conventional remote control device producing infrared signals that are received by the controllable device. The controllable devices may include televisions, VCRs or other electronic appliances or devices capable of receiving the infrared signals. Accordingly, the coding device may be designed to receive the infrared signals produced by the remote control device. The infrared signals produced by the transmitting means of the decoding device can be adapted to transmit the same key characteristic (such as frequency and duration) as the infrared signals produced by the remote control device. Thus, said decoding device can communicate with the controlled device in the same way as the conventional remote control device would communicate with the controllable device.

Other implementations, which provide similar functions, could be substituted for the aforementioned implementations without departing from the scope of the present invention.

The method of the invention describes steps of operation of the system for remote control of at least two controllable devices: adding to the user-specified command a device identifier for identification of at least one of the controllable devices and transmitting the device identifier and the user-specified command.

Obviously, different frame structures may be used to compose a message including the device identifier and the user-specified command. For example, a header incorporating the device identifier may be added to the message with the user-specified command. Any digital, symbol or other format may be used for implementation of the device identifiers.

The method further comprises steps being executed at the decoding device: receiving the device identifier and the user-specified command; then extracting the device identifier, comparing said extracted device identifier with a further device identifier for identification of the controllable device. The method provides the steps of refraining from further operation with the received user-specified command if said identifiers do not match, and supplying the user-specified command to the controllable device if the identifiers do match.

The steps of receiving and sending the user-specified command or the device identifier and user-specified command could be modified accordingly for the system of the present invention. Thus, the step of supplying the user-specified command to the controllable device may comprise a step of transmitting the user-specified command to the controllable device. Also, the step of obtaining the user-specified command from the remote control device may comprise a step of receiving the user-specified command from the remote control device.

Before the afore-mentioned steps, the device identifiers have to be assigned to the associated controllable devices or to the groups of the controllable devices and then indicated

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in the decoding device. The device identifier could be indicated in the coding device with the help of the means for selecting the device identifiers, and in the decoding device with the help of the means for setting the further device identifiers associated with the controlled device. Various switches, buttons, keys, other hardware realizations or program products could implement these means for selecting and setting device identifiers.

The invention makes it possible to control many controllable devices by using the one remote control device with the means for selecting of the device identifiers. When each device identifier is associated with the only one controllable device, a user can select the associated device identifier at the remote control device and control this controllable device independently of the rest of them.

The remote control system of the present invention also allows the use of more than one remote control device equipped with the coding device. It is also possible to use the remote control devices equipped with the coding devices and the conventional remote control devices at the same time in the system.

The various program products may implement the functions of the system and method of the present invention and may be combined in several ways with the hardware or located in different devices. Variations and modifications of the described embodiment are possible within the scope of the inventive concept.

The invention claimed is:

1. A system for remote control of at least two like controllable devices, the system comprising:
 - a) a remote control device comprising:
 - a remote control input means for inputting a user-specified command for controlling the controllable devices; and
 - a remote control transmitting means adapted to transmit the user-specified command;
 - b) a coding device comprising:
 - a coding input means for receiving the user-specified command from the remote control device;
 - a coding means designed to add to the user-specified command a device identifier for identification of at least one of the controllable devices;
 - a coding transmitting means adapted to transmit the device identifier and the user-specified command in combination;
 - c) the like controllable devices each comprising:
 - a receiving means adapted to receive the device identifier and the user-specified command in combination;
 - a decoding means designed (1) to extract the device identifier, (2) to compare said extracted device identifier with a further device identifier for identification of the controllable device, and (3) to refrain from further operation with the received user-specified command if said identifiers do not match;
 - an output means for supplying the user-specified command if said identifiers do match;
- wherein the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, the remote control device functioning to transmit the user-specified command to controllable devices when the coding device is disconnected and the coding device functioning to transmit the user-specified command when the remote control device and the coding device are connected.

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2. The system according to claim 1, wherein the device identifier added by the coding means is user-selected and the further device identifier to which the decoding means compares the extracted device identifier is user-selected.

3. A system for remote control of a plurality of like controllable devices which are controllable with common commands, the system comprising:

- a) a remote control device including:
 - an input means for inputting a user-specified one of the commands which control the plurality of like controllable devices;
 - a coding means configured to add to the user-specified command a device identifier for identification of at least a selected one of the controllable devices;
 - a transmitting means configured to transmit the device identifier and the user-specified command in combination;

b) a decoding device comprising:

- a first receiving means configured to receive the device identifier and the user-specified command in combination;
- a decoding means configured to (1) extract the device identifier and (2) compare said extracted device identifier with a user-specified device identifier for identification corresponding to the controllable selected device;
- an output means configured for supplying the user-specified command to the corresponding controllable device if the identifiers match;

c) the controllable devices each comprising:

- a second receiving means configured to receive the user-specified command from the corresponding decoding device output means;
- a means for controlling the controllable device to implement each user-specified command received from the decoding device;

wherein the decoding device and the controllable devices are separate devices, the decoding device being selectively connectable to one of the controllable devices, when the decoding device is connected with the controllable device, the decoding device receives the transmitted device identifier and the user-specified command in combination from the coding device and when the decoding device is separate from the controllable device, the controllable device receives the user-specified command and the device identifier in combination from the coding device.

4. A system for remote control of a plurality of like controllable devices, the system comprising:

- a) a remote control device comprising:
 - a remote control input means for inputting a user-specified command for controlling the controllable devices; and
 - a remote control transmitting means adapted to transmit the user-specified command;
- b) a coding device comprising:
 - a coding input means for receiving the user-specified command from the remote control device;
 - a coding means designed to combine the user-specified command and a device identifier for identification of at least one of the controllable devices;
 - a coding transmitting means adapted to transmit the device identifier and the user-specified command in combination;

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c) a decoding device comprising:

- a decoding receiving means adapted to receive the combined device identifier and the user-specified command from the coding device;
- a decoding means designed to (1) extract the device identifier and (2) compare said extracted device identifier with a further device identifier for identification of an associated controllable device;
- an output means for supplying the user-specified command to the associated controllable device if the identifiers match;

d) the controllable devices each comprising:

- a receiving means adapted to receive the user-specified command from an associated decoding device output means;
- a means for controlling the controllable device to carry out the user-specified command received by the coding device; and

e) wherein at least one of:

the remote control device and the coding device are separate devices which are selectively interconnectable and disconnectable, the remote control device functioning to transmit the user-specified command to controllable devices when the coding device is disconnected and the coding device functioning to transmit the user-specified command when the remote control device and the coding device are connected; and

the decoding device and the controllable devices are separate devices, the decoding device being selectively connectable to one of the controllable devices, when the decoding device is connected with the controllable device, the decoding device receives the transmitted device identifier and the user-specified command in combination from the coding device and when the decoding device is separate from the controllable device, the controllable device receives the user-specified command and the device identifier in combination from the coding device.

5. A method for remote control of at least two like controllable devices, the method comprising:

- a) with a remote control device,
 - inputting a user-specified command for controlling the controllable devices; and
 - transmitting the user-specified command;
 - b) with a coding device,
 - receiving the user-specified command from the remote control device;
 - adding to the user-specified command a device identifier for identification of at least one of the controllable devices;
 - transmitting the device identifier and the user-specified command in combination;
 - c) with one of the like controllable devices,
 - receiving the device identifier and the user-specified command in combination;
 - extracting the device identifier;
 - comparing said extracted device identifier with a further device identifier for identification of the controllable device;
 - refraining from further operation with the received user-specified command if said identifiers do not match; and
 - supplying the user-specified command if said identifiers do match;
- wherein the remote control device and the coding device are separate devices which are selectively interconnect-

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able and disconnectable, and wherein the step of transmitting the user specified command further includes: transmitting the user-specified command from the remote control device to controllable devices when the coding device is disconnected and
 5 transmitting the user-specified command and the device identifier from the coding device to the controllable devices when the remote control device and the coding device are connected.

6. A method for remote control of a plurality of like
 10 controllable devices which are controllable with common commands, the method comprising:

- a) with a remote control device,
 inputting a user-specified one of the common commands which control the plurality of like controllable
 15 devices;
 adding to the user-specified command a device identifier for identification of at least a selected one of the controllable devices;
 transmitting the device identifier and the user-specified
 20 command in combination;
- b) with a decoding device,
 receiving the device identifier and the user-specified command in combination;
 extracting the device identifier,
 25 comparing said extracted device identifier with a user-specified device identifier for identification of an identified one of the controllable devices;

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supplying the user-specified command to the corresponding controllable device if the identifiers match;

- c) with the identified controllable device,
 receiving the user-specified command from the corresponding decoding device output means;
 controlling the identified controllable device to implement each user-specified command received from the decoding device;

wherein the decoding device and the controllable devices are separate devices, the decoding device being selectively connectable to the identified one of the controllable devices, and further including:

when the decoding device is connected with the identified controllable device, receiving the transmitted device identifier and the user-specified command in combination from the coding device with the decoding device, and

when the decoding device is separate from the controllable device, receiving the user-specified command and the device identifier in combination from the coding device with the identified controlling device.

* * * * *

CERTIFICATE OF SERVICE

On October 11, 2023, the undersigned caused the foregoing document to be filed electronically by using the Court's CM/ECF system. All parties are represented by registered CM/ECF users and will be served APPELLANT'S OPENING BRIEF (CONFIDENTIAL) by electronic email at the following email addresses:

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this brief complies with the type-volume limitation of Federal Circuit Rule of Practice 32(b)(1). The brief contains 13,257 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(f) and Federal Circuit Rule of Practice 32(b)(2). This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6). The brief has been prepared in a proportionally spaced typeface using Microsoft Word 365 in Times New Roman 14-point font.

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